

INCH-POUND
ATPD 2239
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SUPERSEDING
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PURCHASE DESCRIPTION

TRAINERS, TANK TURRET: GUNNERY, M26 (M48A2) AND M30A1 (M60A1); PROCESSING FOR STORAGE AND SHIPMENT OF

This purchase description is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This purchase description covers processing of the M26 (M48A2) and M30A1 (M60A1) Gunnery, Tank Turret Trainers for storage outside of buildings, for immediate use domestic shipment, and for overseas shipment, including car loading; meeting the requirements of levels A, B and C processing (see 1.2).

1.2 Classification. Processing will be of the following levels as specified (see 6.2):

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| Levels A and B | - Processing for overseas shipment and any storage outside of buildings in excess of 90 days from processing date (periodic care and preservation during storage required). |
| Level C | - Limited processing for immediate use domestic shipment (excluding open deck loading) and any storage not to exceed 90 days from processing date. |

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: U.S. Army Tank-automotive and Armaments Command, ATTN: AMSTA-TR-E/BUE, Warren, MI 48397-5000, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document, or by letter.

AMSC N/A

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DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this purchase description. This section does not include documents cited in other sections of this purchase description or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirement documents cited in sections 3 and 4 of this purchase description, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

FEDERAL

A-A-203	- Paper, Kraft, Untreated.
A-A-1492	- Tape Gummed, Paper, Plain.
A-A-1898	- Cushioning Material, Cellulosic, Packaging.
A-A-50177	- Paper, Lens.
A-A-52518	- Tire Pneumatic: Retread and Repair Materials.
PPP-B-621	- Boxes, Wood, Nailed and Lock-Corner.
PPP-B-1055	- Barrier Material, Waterproofed, Flexible.
TT-E-529	- Enamel, Alkyd, Semi-gloss, Low VOC Content.
VV-L-800	- Lubricating Oil, General Purpose Preservative (Water Displacing, Low Temperature).

DEPARTMENT OF DEFENSE

MIL-B-117	- Bags, Sleeves and Tubing-Interior Packaging.
MIL-B-121	- Barrier Material, Greaseproofed, Waterproofed, Flexible.
MIL-B-131	- Barrier Materials, Water Vaporproof, Greaseproof, Flexible, Heat-Sealable.
MIL-P-3420	- Packaging Materials, Volatile Corrosion Inhibitor Treated, Opaque.

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MIL-H-6083	- Hydraulic Fluid, Petroleum Base, for Preservation and Operation.
MIL-I-8574	- Inhibitors, Corrosion, Volatile, Utilization of.
MIL-PRF-10924	- Grease, Automotive and Artillery.
MIL-PRF-16173	- Corrosion Preventive Compound, Solvent Cutback, Cold Application.
MIL-C-20696	- Cloth, Coated, Nylon, Waterproof.

STANDARDS

DEPARTMENT OF DEFENSE

MIL-STD-129	- Military Marking.
MIL-STD-1186	- Cushioning, Anchoring, Bracing, Blocking and Waterproofing; with Appropriate Test Methods.
MIL-STD-2073-1	- Military Packaging, Standard Practice for.

(Unless otherwise indicated, copies of the above specifications, standards, and handbooks are available from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2 Other Government documents, drawings, and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

TECHNICAL MANUALS (TM)

TM 750-116	- Purging and Charging of Fire Control Instruments, General Procedures for the.
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DEPOT MAINTENANCE WORK REQUIREMENTS (DMWR)

9-1240-258	- Cleaning, General Procedures for.
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(Application for copies of technical manuals and work requirements should be addressed to U.S. Army Tank-automotive and Armaments Command, AMSTA-TR-E/BLOCK, Warren, MI 48397-5000.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation.

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Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D1974	- Closing, Sealing, and Reinforcing, Standard Specification for (DoD Adopted).
ASTM D3953-87	- Strapping, Steel and Seals, Standard Specification for (DoD Adopted).
ASTM D4727	- Fiberboard: Corrugated and Solid, Sheet Stock (Container Grade), and Cut Shapes, Standard Specification for (DoD Adopted).
ASTM D5118/5118M	- Fabrication of Fiberboard Shipping Boxes, Standard Specification for the (DoD adopted).
ASTM D5486	- Pressure-Sensitive Tape for Packaging, Box Closure, and Sealing, Standard Specification for (DoD Adopted).

(Application for copies should be addressed to the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959)

ASSOCIATION OF AMERICAN RAILROADS (AAR)

Section number 1	- General Rules Governing Loading of Commodities on Open Top Cars.
Section number 6	- Rules Governing the Loading of Defense Material on Open Top Cars.

(Application for copies should be addressed to Association of American Railroads, 50 F. Street, N.W., Washington, D.C. 2001)

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First Article. When specified (see 6.2), a sample shall be subjected to first article inspection in accordance with 4.2

3.2 Processing levels A and B. Trainers processed for levels A and B shall be processed as specified in paragraphs 3.2.1 through 3.2.23 and 3.3 through 3.3.4 (see figures 1 through 37).

3.2.1 Materials. The materials and components shall conform to applicable specifications, standards, and patterns required herein (see 4.4.1).

3.2.1.1 Volatile corrosion inhibitor (VCI). When specified as VCI-treated, carrier material shall conform to class 3 of MIL-P-3420, and shall be used in accordance with MIL-I-8574 (see 4.4.1).

3.2.2 Preparation prior to processing. Unless otherwise specified herein, and to the maximum extent consistent with production efficiency, economy and safe storage and shipment, trainer shall be prepared for storage and shipment in a completely assembled condition after test runs and after completion and approval of necessary repairs. Specified equipment shall be installed and all adjustments made so that the vehicle may be operated, shipped, and placed into service with a minimum of delay (see 4.4.2).

3.2.2.1 Disassembly. Observer platforms or catwalks, storage boxes, cannon tube, and any other detachable equipment susceptible to damage in shipment or storage, shall be removed from trainer (see 4.4.2).

3.2.2.2 Processing records. Records of trainer processing shall be maintained and be readily available for review by the Government inspector (see 4.4.2).

3.2.3 Cleaning and drying.

3.2.3.1 Interior of trainer. Trainer interior surfaces, including the headrests and crash pads (see 3.2.12), shall be cleaned and dried by any process or combination of processes which will accomplish thorough cleaning and drying without damage to the item, except that no liquids under pressure shall be used (see 4.4.2).

3.2.3.1.1 Fire control instruments. Fire control instruments shall be cleaned in accordance with the applicable specification (see 3.2.9 and 4.4.2)

3.2.3.2 Exterior of trainer. Trainer exterior surfaces shall be cleaned and dried by any process or combination of processes which will accomplish thorough cleaning and drying without damage to the item, except that no steam or water jet shall be directed at the interior of trainer (see 4.4.2).

3.2.3.2.1 Cannon. When inspection indicates the need for reprocessing of cannon, cannon shall be cleaned and dried as prescribed in 3.2.3.2 (see 4.4.2).

3.2.4 Relubrication. When trainer has been operated in excess of 30 days since previous lubrication, or after a liquid and detergent cleaning, trainer shall be lubricated using materials in accordance with drawings, specifications, or lubrication order pertinent to the trainer. All exposed oil-can points such as hinges, latches, control-rod clevises, pins and control levers shall be lubricated with lubricating oil conforming to VV-L-800. Excess lubricating material shall be removed after lubrication (see 4.4.2).

3.2.5 Turret ring bearing. Plugs shall be removed from grease fitting openings in turret ring bearing and grease fittings installed. Grease conforming to MIL-PRF-10924 shall be pumped through the grease fittings until grease is visible between the two sections around the circumference of the ring. The turret shall be rotated five times in both directions and again lubricated until all surfaces on the circumference of the ring are lubricated. Grease fittings shall be removed and plugs reinstalled. Excess grease shall be removed from the exterior surface of the race. DD form 1397 shall be marked with the information, "TURRET BEARING COMPLETELY FILLED WITH GREASE- SPECIFICATION MIL-PRF-10924" (see 4.4.2).

3.2.6 Cannon and mount.

3.2.6.1 Cannon tube. Cannon tube shall be removed and cleaned. After cleaning (see 3.2.3.2.1), bore and chamber of the cannon shall be coated with preservative oil conforming to VV-L-800. Excess preservative shall be allowed to drain from coated surfaces. A strip of VCI-treated carrier material conforming to class 3 of MIL-P-3420 (see 3.2.1.1) shall be cut and rolled into a tube with the VCI-treated surface on the outside. The carrier material shall be of a size that will provide a continuous cover for the bore and chamber surfaces. The rolled carrier material tube shall be inserted into the cannon, extending the entire length of bore and chamber. Tube shall not be forced or kinked in a manner that would obstruct the chamber. Preservative conforming to grade 4 of MIL-PRF-16173 shall be applied to all exterior, unpainted surfaces of cannon tube. All cannon tube openings shall be sealed and exterior, preserved surfaces covered with barrier material conforming to MIL-B-131, and tape conforming to type I, class 1, of ASTM D5486. Cannon ends shall be overwrapped with barrier materials conforming to type I, grade C, of MIL-B-121, and sealed with tape conforming to type I, class 1, of ASTM D5486 (see figures 5, 25, and 31, and paragraph 4.4.2). The muzzle brake shall remain installed on the M26 cannon tube. The bore evacuator shall remain installed on the M30A1 cannon tube.

3.2.6.2 Cannon mount. After cannon tube is removed, grease conforming to MIL-PRF-10924 shall be applied to all unpainted surfaces, including phosphated surfaces, on all components of the cannon mount. The preserved cannon mount shall be overwrapped with barrier material conforming to type II, grade A, class 2 of MIL-B-121. Barrier materials shall be secured in place with tape conforming to grade B of A-A-1492. Cannon mount shall be blocked in position by placing a nominal 4x4x8 inch (in.) wood block between the top of the mantlet and the turret (see figure 30 and paragraph 4.4.2).

3.2.6.3 Exercising of recoil mechanism. Prior to processing, as specified in 3.2.6.4 and 3.2.6.4.1, and when the recoil mechanism has not been exercised, proof-fired, overhauled, or manufactured within 4 months prior to preparation for storage or shipment, the recoil mechanism shall be exercised a minimum of three extensions of the recoil position. Extension shall be not less than 6 in. Record of exercising shall be entered on applicable forms (see 4.4.2).

3.2.6.4 Exercising of replenisher. Replenisher assemblies shall be exercised coincidentally with the recoil mechanism (see 3.2.6.3 and 4.4.2).

3.2.6.4.1 Processing of replenisher after exercising. Replenisher shall be filled to bleed position with hydraulic fluid conforming to type 1 of MIL-H-6083, then drained to operating level (see 3.2.6.3 and 4.4.2).

3.2.6.5 Commander's cupola. Periscope guard on top of cupola shall be removed, identified, and stowed in interior of turret. Bolts and washers shall be reinstalled (see 4.4.2).

3.2.7 Miscellaneous preservation. Except as otherwise specified (see 6.2), all exposed, unpainted, unplated surfaces including machined-metal surfaces on the interior and exterior of the trainer, shall be coated with preservative conforming to grade 4 of MIL-PRF-16173 (see 4.4.2).

3.2.8 Hatches. Rubber seals around hatches shall be coated with powered talc conforming to type IV, class C of A-A-52518. During shipment, hatches shall be closed and locked from the inside. During storage, hatches shall be blocked open as much as possible, without interfering with the cover, to allow maximum ventilation under trainer cover (see 4.4.2).

3.2.9 Fire control items.

3.2.9.1 Range finders. Exposed optical glass shall be cleaned in accordance with DMWR 9-1240-258. Cleaning shall be accomplished with a minimum of pressure and rubbing, without the use of cloth or rubber materials, to prevent damage to lens coatings. Immediately after cleaning, the optics shall be covered or wrapped with lens tissue conforming to type II of A-A-50177 and secured with tape conforming to type I, class 1, of ASTM D5486. All exposed, unpainted metal surfaces, shall be coated with grease conforming to MIL-PRF-10924 (see 4.4.2).

3.2.9.1.1 Purging of range finders. Range finders on hand for over 90 days from date of receipt at trainer manufacturer, not protected as specified in 3.2.9.1, opened for maintenance, or that show evidence of moisture, shall be purged in accordance with appropriate procedures in TM 750-116. After purging, the range finder shall be processed in accordance with 3.2.9.1. End boxes shall be purged only when internal moisture is found during inspection (see 4.4.2).

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3.2.9.2 M105C telescope, M28C periscope and M31 periscope. The M105C telescope, M28C periscope, and M31 periscope shall not be removed from their installed position in the trainer for shipment or storage, and shall be processed as specified in 3.2.9.1 and 3.2.9.1.1 (see 4.4.2).

3.2.9.3 M24 and M27 periscopes. If installed, the M24 and M27 periscopes shall be removed from the trainer, processed as specified in 3.2.9.1 and 3.2.9.1.1, and packed in accordance with level A requirements of MIL-STD-2073-1 (see 4.4.2).

3.2.9.4 Instrument lights (dry-cell powered). If installed, instrument lights shall be removed from the trainer and packaged in accordance with level A requirements of MIL-STD-2073-1. Packed lights shall be identified and stowed with On-Vehicle-Equipment (OVE). Batteries, if installed, shall be removed, packaged, identified and stowed with the OVE (see 4.4.2).

3.2.9.5 Mounts, ballistic computer and drive. All exposed, unpainted, metal surfaces of periscope and telescope mounts, and also computer and drive, shall be coated with grease conforming to MIL-PRF-10924 (see 4.4.2).

3.2.9.6 Infinity sight, M44C. If installed, infinity sight shall be removed from the trainer, packaged in accordance with level A requirements of MIL-STD-2073-1, then identified and stowed with OVE (see 4.4.2).

3.2.9.7 Level vial covers. All level vial covers shall be positioned over the vials (see 4.4.2).

3.2.9.8 Exposed optical glass. Any exposed optical glass, not otherwise provided for herein, shall be cleaned as specified in DMWR 9-1240-258, and wrapped and taped in accordance with applicable requirements in MIL-STD-2073-1 (see 4.4.2).

3.2.10 On-Vehicle-Equipment (OVE). Except as otherwise specified (see 6.2), all spare parts, tools and equipment shall be packaged, packed, and marked in accordance with ATPD 2241. For shipping purposes, OVE containers shall be blocked, braced and anchored to prevent movement. OVE containers shall be placed in a position which will not increase the overall cube. Each container shall be secured in each direction with two 1.25 in. straps conforming to type I, class 1, of ASTM D3953-87, or by placing it between two or more secured containers or any other equally effective holding device. Corner plates shall be used under strapping. Pack shall be identified to pertinent trainer by serial number and, except during shipment, shall be stored inside buildings (see 4.4.2).

3.2.11 Record form. A copy of “The Equipment Log Book” consisting of binder (NSN 7510-889-3494) with required forms, and two copies of “Processing and Deprocessing Record for Shipment, Storage, and Issue of Vehicles and Spare Engines”, DD Form 1397 (see 6.4), shall be furnished and completed with each trainer. Instructions for preparation and attachment or location of “the Equipment Log Book” shall be supplied by the Government representative. One copy of DD Form 1397 shall be placed in an envelope conforming to type I, class E of MIL-B-117. Envelope shall be closed by stapling, identified, and secured to trainer. The duplicate copy shall be placed in the envelope with the log book (see 4.4.2).

3.2.12 Headrests and crash pads. Immediately after drying, cushioned portions of headrests and crash pads shall be covered with paper conforming to grade B of A-A-203 and have a minimum basis weight of 60 pounds. Paper shall be secured with tape conforming to type I, class 1, of ASTM D5486 (see 4.4.2).

3.2.13 Fire extinguisher. Carbon dioxide (CO₂) fire extinguisher cylinder shall have a minimum of 90 percent of rated full charge. All seals shall be intact and applicable verification of inspection tag shall be completed and securely attached to each cylinder (see 4.4.2 and 6.3).

3.2.14 Power rectifier. Rectifier and all external connectors shall be covered with barrier material conforming to class 1 of MIL-B-131. Barrier material shall be sealed with tape conforming to type I, class I, of ASTM D5486. Preservative conforming to grade 4 of MIL-PRF-16173 shall be applied to unpainted, nonelectrical exterior surfaces of wheels and handle. The preserved areas shall be wrapped with barrier material conforming to type II, grade A, class 2 of MIL-B-121. Power rectifier shall then be placed in a nailed wood box conforming to class 2, style 2 of PPP-B-621, and cushioned and blocked in accordance with the applicable requirements of MIL-STD-1186. Two nominal 2x4 in. skids shall be added to nailed, wood box. The box shall be covered with barrier material conforming to class E-2 of PPP-B-1055. Barrier material shall extend to 12 in. below the top of the box. Box shall be marked in accordance with MIL-STD-129 (see 4.4.2 and 6.5).

3.2.15 Power receptacle. Power receptacle shall be sealed with tape conforming to type I, class 1, of ASTM D5486 (see 4.4.2).

3.2.16 Canvas. Canvas items, including muzzle brake cover, shall be removed, thoroughly dried, and placed in a carton conforming to ASTM D1974 and ASTM D5118/5118M. After packaging, carton shall be marked in accordance with MIL-STD-129 and placed within turret and secured (see 4.4.2 and 6.5).

3.2.17 Metal stowage box. The metal stowage box provided for the M30A1 trainer shall be packed in a container constructed in accordance with figure 18. The packed container shall be placed on the skid in accordance with figure 11, and secured in that position (see 4.4.2).

3.2.18 Cartridge racks. Cartridge racks shall be loaded with empty cartridge shells (see 4.4.2).

3.2.19 Trainer skid. Trainers shall be installed on skids constructed in accordance with figures 1 through 4. Observer platforms, stowage boxes, cannon tube, boxed rectifier and OVE shall be installed and secured on the skid in accordance with figures 5 through 35 and table I, as applicable. Table I shows the figure numbers that apply to the designated level of processing for M26 and M30A1 trainers (see 4.4.2).

TABLE I. Installation of M26 and M30A1 trainers - levels of processing.

Figure numbers	M26		M30A1	
	Levels A and B	Level C	Levels A and B	Level C
1, 2, 3, 4, 6, 7, 14, 15, 19, 30 36, 37	X	X	X	X
8, 9, 12, 16, 17, 18, 20, 21, 23, 27 25, 34, 35	X X	X	X	X
5, 10, 11, 13, 22, 24, 26, 28, 29, 31, 32, 33			X	

3.2.20 Trainer turret openings. The turret openings shall be closed with 0.13 in. masonite. Masonite shall be secured in place with brackets conforming to figure 17. The openings around bottom of trainer stand shall also be closed with 0.13 in. masonite conforming to figures 8 and 9. The trainer basket protective screening shall be covered with fiberboard conforming to type CW, class WR, variety SW, grade W5c, of ASTM D4727. The above masonite and fiberboard closures shall be sealed with 4 in. wide tape conforming to type I, class 2, of ASTM D5486 (see 4.4.2).

3.2.21 Trainer cover. Trainer cover shall be fabricated from nylon-coated cloth conforming to type II, class 3 of MIL-C-20696, except that the overall weight shall be 14 oz. per square yard. Cover shall be of a size that it can be positioned to conform to the counter of the turret and completely cover the trainer. Cover shall extend over the edge of the trainer sufficiently to allow maximum closure and securement. All sharp corners of trainer shall be cushioned with a 0.75 in. minimum thickness of cushioning material conforming to A-A-1898, secure in place with tape conforming to type I, class 1 of ASTM D5486. The lifting eyes shall not be used for lifting trainer when trainer is secured to the skid. The information "DO NOT LIFT" shall be stenciled on the cover at each lifting eye. Stenciling shall be in characters a minimum of 2 in. high, using white enamel conforming to TT-E-529 (see 4.4.2).

3.2.22. Marking. In addition to any special marking specified herein or in the contract or order (see 6.2), the trainer shall be marked in accordance with MIL-STD-129 (see 4.4.2 and 6.5).

3.2.22.1 Skid lifting points. The information “Lift Here” shall be stenciled at each skid lifting eye using white enamel conforming to TT-E-529. Stenciling shall be in characters a minimum of 2 in. high. In lifting, spreaders shall be used to avoid damage to cover (see 4.4.2).

3.2.22.2 Humping precaution. The information “DO NOT HUMP” shall be stenciled in a conspicuous location on each side of the open top car (see 4.4.2).

3.2.23 Loading. Skidded trainer shall be blocked, braced, and anchored on open top railroad cars in accordance with “Sections 1 and 6- Rules Governing the Loading of Commodities on Open Top Cars” of the Association of American Railroads publication (see 2.3).

3.3 Trainer level C. Trainers shall be processed the same as for levels A and B, except that paragraphs 3.2.2.1, 3.2.6.1, 3.2.6.2, 3.2.19, 3.2.21, and 3.2.23 shall not apply. In lieu of the excepted paragraphs, 3.3.1 through 3.3.4 shall apply.

3.3.1 Disassembly. Observer platforms or catwalks, stowage boxes, and any other detachable equipment susceptible to damage in shipment or storage shall be removed from trainer. Cannon tube, muzzle brake and evacuator shall not be removed. (see 4.4.2)

3.3.2 Cannon and mount.

3.3.2.1 Cannon tube. After cleaning (see 3.2.3.2.1), bore and chamber of the cannon shall be coated with preservative oil conforming to VV-L-800. Excess preservative shall be allowed to drain from coated surfaces. A strip of VCI-treated barrier material conforming to grade C of MIL-P-3420 (see 3.2.1.1) shall be cut and rolled into a tube with the VCI-treated surface on the outside. The barrier material shall be of a size that will provide a continuous cover for the bore and chamber surfaces. The rolled barrier material tube shall be inserted into the cannon, extending the entire length of bore and chamber. Tube shall not be forced or kinked in a manner that would obstruct the chamber. Cannon tube, muzzle brake, and bore evacuator openings shall be covered with barrier material conforming to class 1 of MIL-B-131. Barrier material shall be sealed with tape conforming to type I, class 1 of ASTM D5486 (see 4.4.2).

3.3.2.1.1 Breech mechanism. All unpainted surfaces, including phosphated surfaces of the breech block, breech operating mechanism, and firing mechanism, shall be coated with grease conforming to MIL-PRF-10924. Breech shall be covered with barrier material conforming to class 1 of MIL-B-131. Barrier material shall be sealed with tape conforming to type I, class 1 of ASTM D5486 (see 4.4.2).

3.3.3 Trainer cover. Trainer cover shall be provided as prescribed in 3.2.21, except that in lieu of the note on the cover at each lifting eye, the information “LIFT HERE” shall be stenciled. Cover shall be provided with an opening for the cannon tube. After cover is installed, the openings around the tube shall be sealed with tape conforming to type I, class 1 of ASTM D5486 (see 4.4.2).

3.3.4 Loading. Trainer, observer platforms, stowage boxes, boxed rectifier and OVE shall be loaded on open top railroad cars. Loading, blocking, bolting, bracing and anchoring shall be in accordance with “Sections 1 and 6 of Rules Governing the Loading of Commodities on Open Top Cars” of the Association of American Railroads publications (see 2.3), and as specified herein. A support frame as shown in figures 36 and 37 shall be constructed on the railroad car for anchoring cannon tube and boxed rectifier in position. Six 1.25 in. holes shall be drilled in the trainer bottom plate. Drilled holes shall be evenly spaced and equidistant from the center and approximately 60 degrees apart. Trainer shall be secured to railroad car floor with six 1.125 - 7 bolts. Four locator brackets, constructed in accordance with figure 16, shall be positioned and secured as shown on figure 6 to prevent movement in transit. Trainer shall then be tied down to railroad car with 0.63 in. wire rope and 0.63 in. turnbuckles using cushioning as shown in figure 7, except that cables shall be attached between turret lifting eyes and car stake pockets. Observer platforms and boxed rectifiers shall be secured to railroad car with 0.25 in. wire rope and 0.38 in. turnbuckles, with 1.5 in. steel strapping, and with wood blocking as shown in figures 36 and 37 (see 4.4.2).

4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. First article inspection (see 4.2).
- b. Production processed trainer inspection (see 4.3).

4.2 First article inspection. First article inspection shall be performed on the first production processed trainer, and on one of the first 10 production processed trainers, when a first article sample is required (see 3.1). Samples shall be subjected to the inspection and tests specified in 4.4.1 through 4.4.4.

4.3 Production processed trainer inspection. Unless otherwise specified (see 6.2), all production processed trainers shall be subjected to the tests specified in 4.4.2.

4.4 Methods of inspection.

4.4.1 Materials. Unless Government inspected at the source, all materials to be used in processing of trainer shall be inspected in accordance with the material specification; or, certified inspection and laboratory test reports shall be furnished which show that materials, as furnished, conform to the purchase description.

4.4.2 Processing. Inspection of processing shall include all items specified in table II, and 4.4.1 through 4.4.2.2.

TABLE II. Processing inspection
(See indicated paragraphs for levels A, B, and C requirements)

	Cleaning	Preservation		Packaging
	Levels A, B, and C	Levels A and B	Level C	Levels A, B, and C
Preparation prior to processing				3.2.2
Disassembly				3.2.2.1 <u>1</u> / 3.2.2.2
Processing records				
Interior of trainer	3.2.3.1			
Headrests and crash pads	3.2.3.1	3.2.12	3.2.12	
Fire control instruments	3.2.3.1.1			
Exterior of trainer	3.2.3.2			
Cannon	3.2.3.2.1			
Relubrication		3.2.4		
Turret ring bearing		3.2.5		
Cannon tube		3.2.6.1	3.3.2	
Cannon mount		3.2.6.2	3.3.2	
Exercising of recoil mechanism		3.2.6.3	3.2.6.3	
Exercising of replenisher		3.2.6.4	3.2.6.4	
Processing of replenisher after exercising		3.2.6.4.1	3.2.6.4.1	
Commander's cupola				3.2.6.5
Miscellaneous preservation		3.2.7	3.2.7	
Hatches		3.2.8	3.2.8	
Range finders	3.2.9.1	3.2.9.1	3.2.9.1	
Purging of range finders	3.2.9.1.1	3.2.9.1.1	3.2.9.1.1	
M105 telescope, M28C and M31 periscopes	3.2.9.2	3.2.9.2	3.2.9.2	
M24 and M27 periscopes				3.2.9.3
Instrument lights				3.2.9.4
Mounts, ballistic computer and drive		3.2.9.5	3.2.9.5	
Infinity sight, M44C				3.2.9.6
Level vial covers				3.2.9.7
Exposed optical glass	3.2.9.8	3.2.9.8	3.2.9.8	

TABLE II. Processing inspection - Continued
(see paragraphs indicated for levels A, B, and C requirements).

	Cleaning	Preservation		Packaging
	Levels A, B, and C	Levels A and B	Level C	Levels A, B, and C
On-vehicle-equipment (OVE)	3.2.10	3.2.10	3.2.10	3.2.10
Record forms				3.2.11
Fire extinguisher				3.2.13
Power rectifier		3.2.14	3.2.14	3.2.14
Canvas		3.2.16	3.2.16	
Metal stowage box				3.2.17
Power receptacle		3.2.15	3.2.15	
Cartridge racks				3.2.18
Trainer skid				3.2.19
Trainer cover				3.2.21 <u>2/</u>
Marking				3.2.22
Skid lifting points				3.2.22.1
Humping precaution				3.2.22.2
Loading				3.2.23 <u>3/</u>

1/ For level C packaging, paragraph 3.3.1 shall apply

2/ For level C packaging, paragraph 3.3.3 shall apply

3/ For level C packaging, paragraph 3.3.4 shall apply.

4.4.2.1 Cleaning. To determine conformance to 3.2.3.1, interior or trainers shall be examined for cleanliness; one vehicle each day shall be tested for cleanliness in accordance with the applicable provisions of MIL-STD-1186. To determine conformance to 3.2.3.2, exterior of vehicle shall be examined for cleanliness. Surfaces to which tape is to be applied shall be examined for cleanliness before applying tape.

4.4.2.2 Cannon. Cannon shall be examined to determine condition and effectiveness of processing. When reprocessing has been accomplished, it shall be examined for conformance to 3.2.3.2.1 and 3.2.6.

5. PACKAGING

(Not applicable to this purchase description)

6. NOTES

(This section contains information of a general or explanatory nature which may be helpful, but is not mandatory.)

ATPD 2239

6.1 Intended use. This purchase description is intended for use in levels A, B, and C processing for storage and shipment of the M26 (M48A2) and M30A1 (M60A1) Gunnery, Tank Turret Trainers.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this purchase description.
- b. Selection of applicable level of processing (see 1.2).
- c. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.2.1 and 2.3)
- d. When first article testing is required (see 3.1).
- e. If miscellaneous preservation is to be other than specified (3.2.7).
- f. If On-vehicle-equipment (OVE) is to be packaged other than specified (see 3.2.10).
- g. If production processed vehicles are to be tested other than specified (see 4.3).

6.3 Safety precautions. Caution should be exercised in handling CO₂ fire extinguisher cylinders. Cylinders should not be dropped, permitted to strike each other, or be handled roughly. Extreme care should be exercised during the reinstallation operation to avoid tripping fire extinguisher control system (see 3.2.13).

6.4 Forms. A copy of the "Equipment Log Book" and all required forms will be furnished by the Government at least 30 days before shipment of the equipment, as required by the contract delivery schedule (see 3.2.11).

6.5 Supplemental publications. MIL-HDBK-129 provides general information on military marking and should be used to provide guidance for the utilization of MIL-STD-129. Copies of MIL-HDBK-129 are available from Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

6.6 Subject term (key word) listing.

Cannon
Cupola
Fire control items
Packaging
Preservation
Range finder
Replenisher

6.7 Changes from previous issue. Due to the extent of the changes, marginal notations are not used in this revision to identify changes with respect to the previous issue.

MATERIAL: GROUP 4 - OAK-ROUGH-CUT



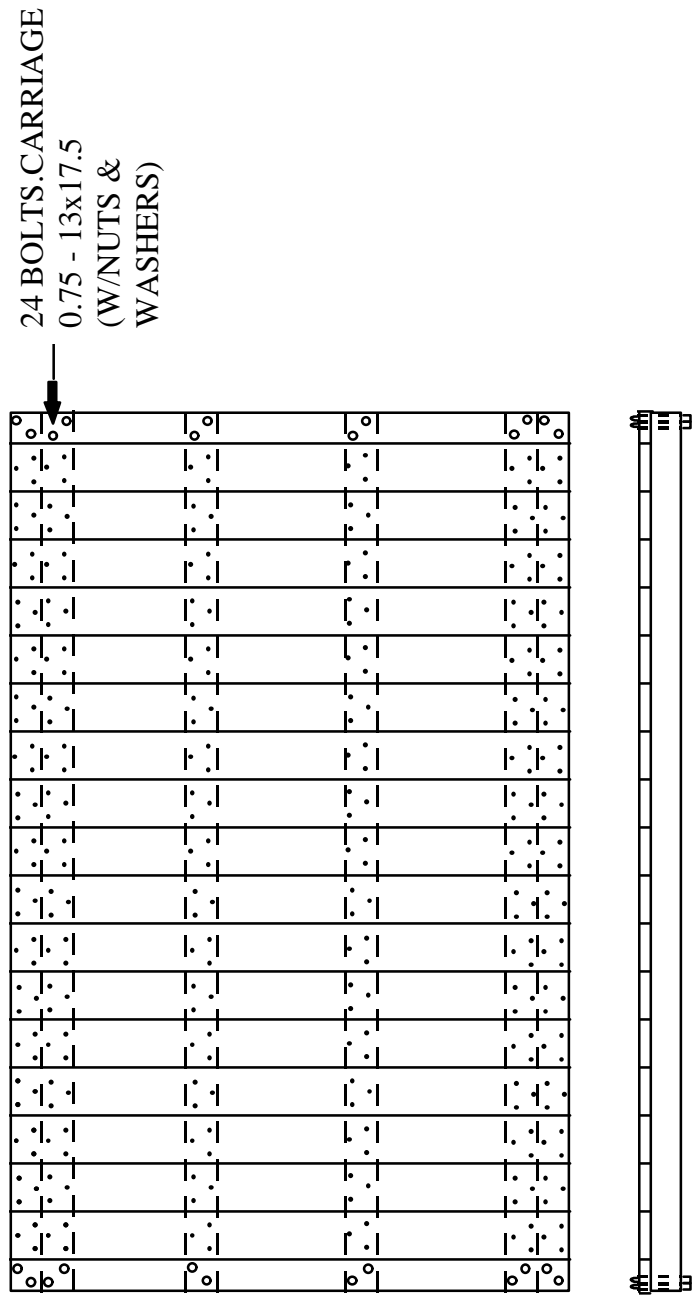


FIGURE 2. M26 - M30A1 turret gunnery trainers - shipping skid
with #2 oak flooring - 2x12 - nail pattern shown.

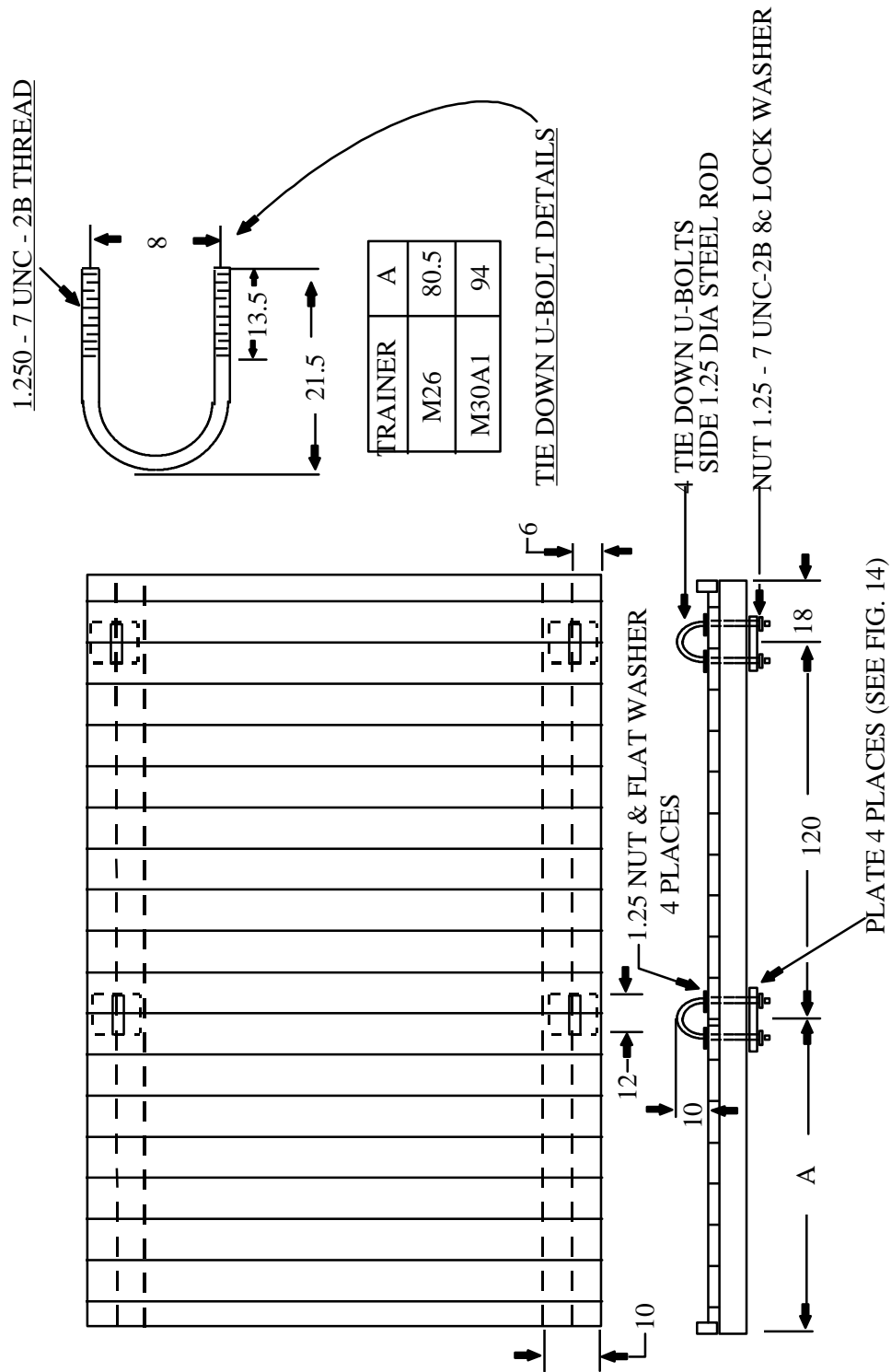


FIGURE 3. M26 - M30A1 turret gunnery trainers - shipping skid
(with tie-down U-bolts added).

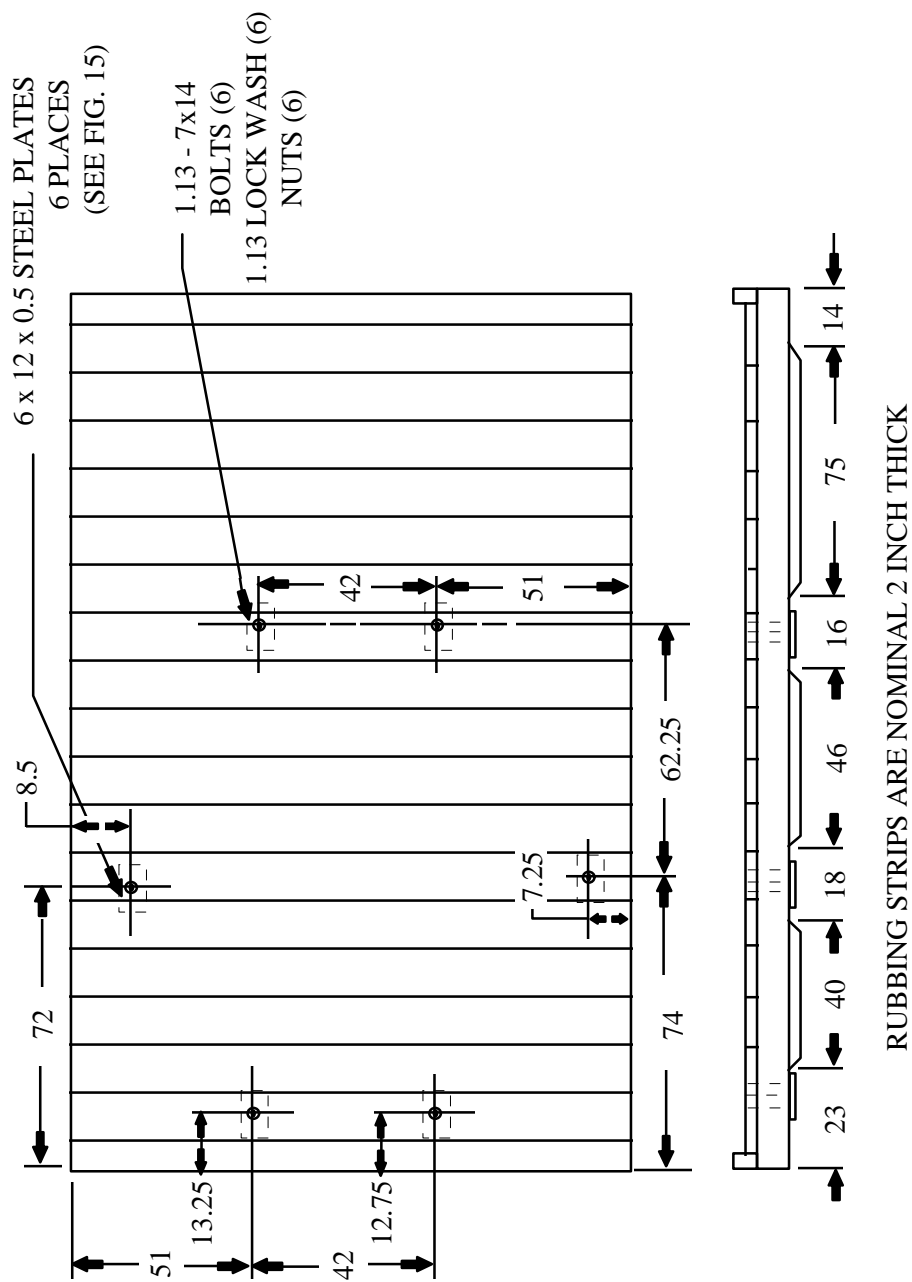
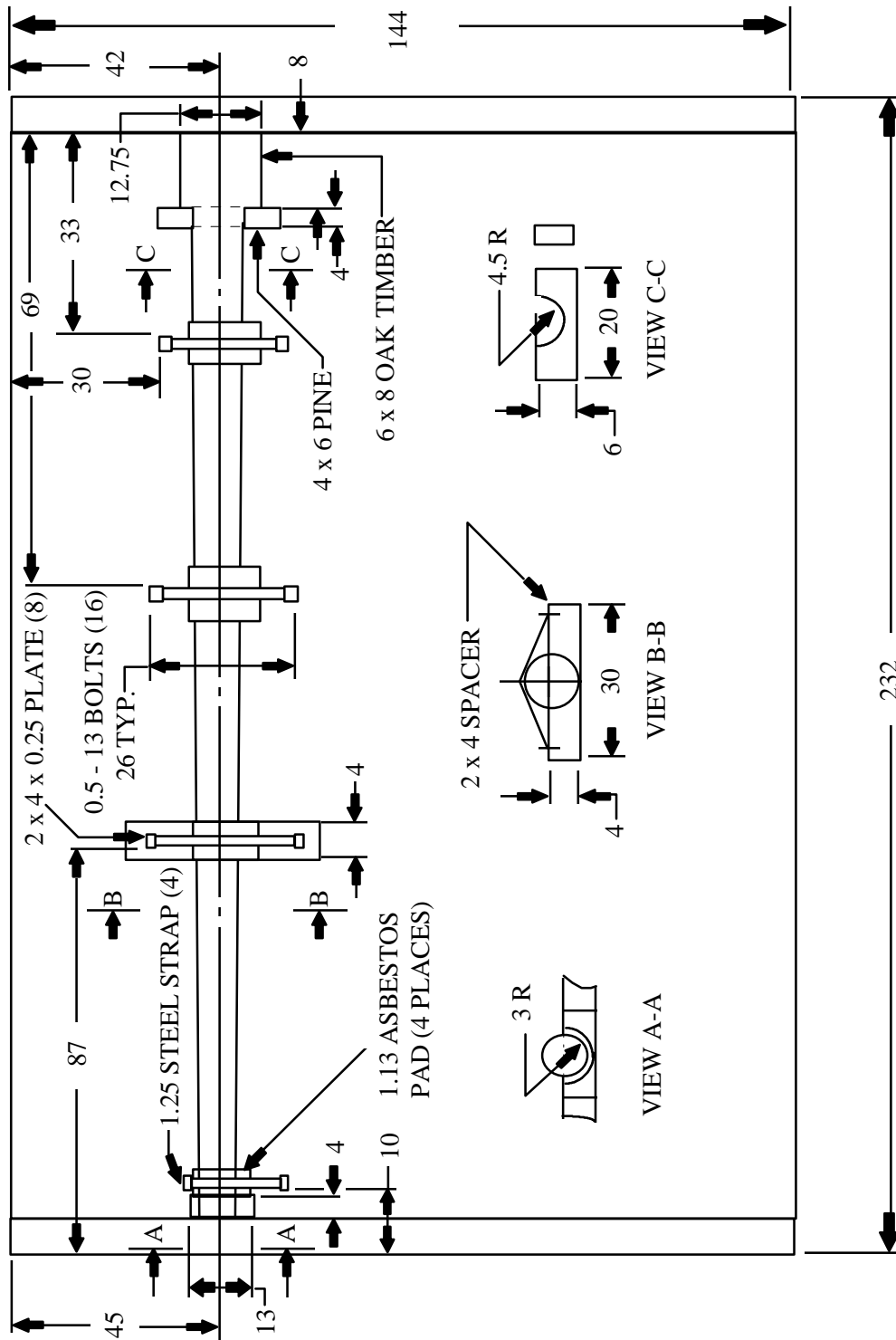


FIGURE 4. M26 - M30A1 turret gunnery trainers - trainer stand mount holes in shipping skid (with reinforcement plates) - skid plates under shipping skid



REF. FIG 31

FIGURE 5. M30A1 turret gunnery trainer - gun tube tie-down to shipping skid.



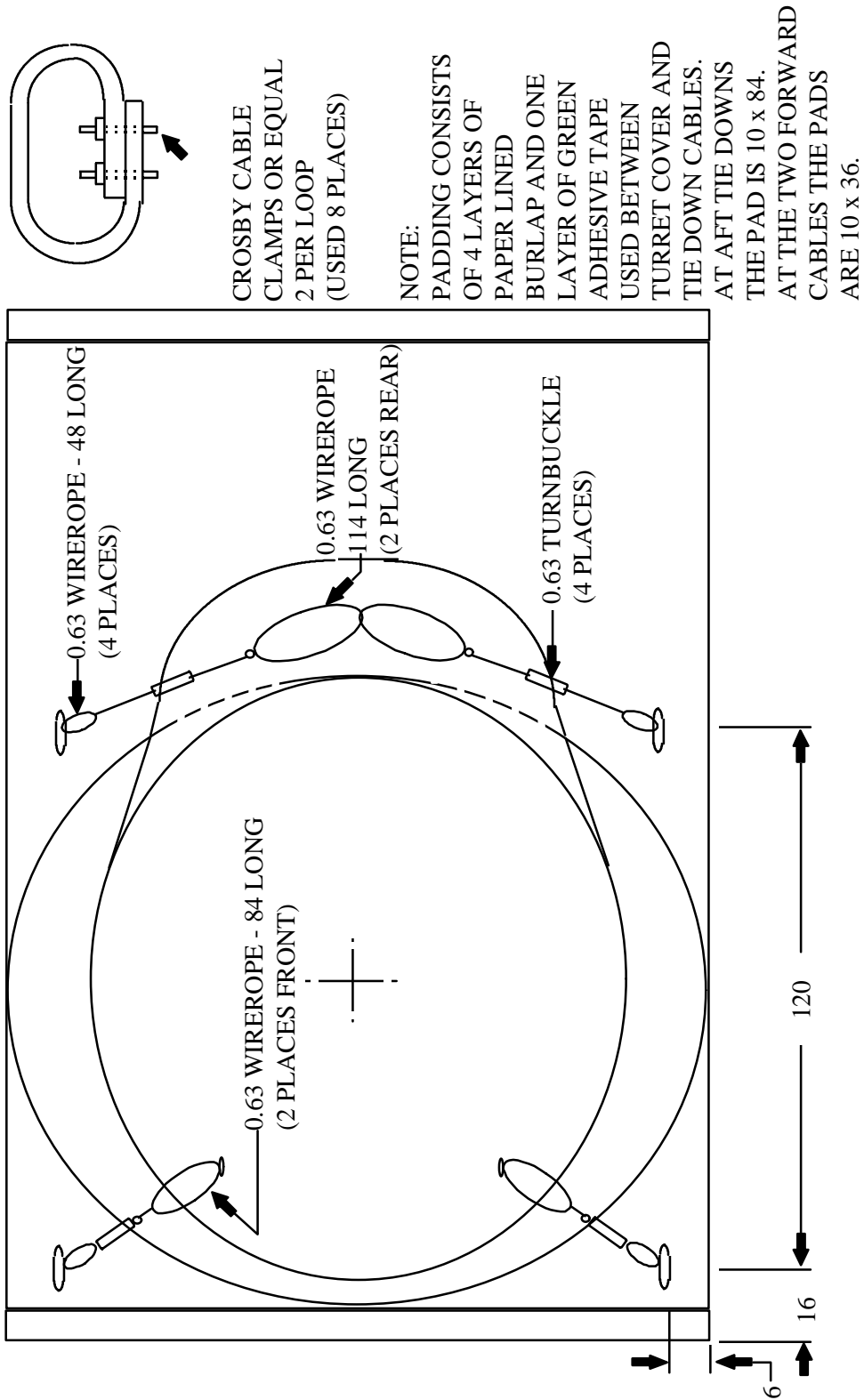


FIGURE 7. M26-M30A1 turret gunnery trainers- tie-down of turret to eyes on shipping skid.

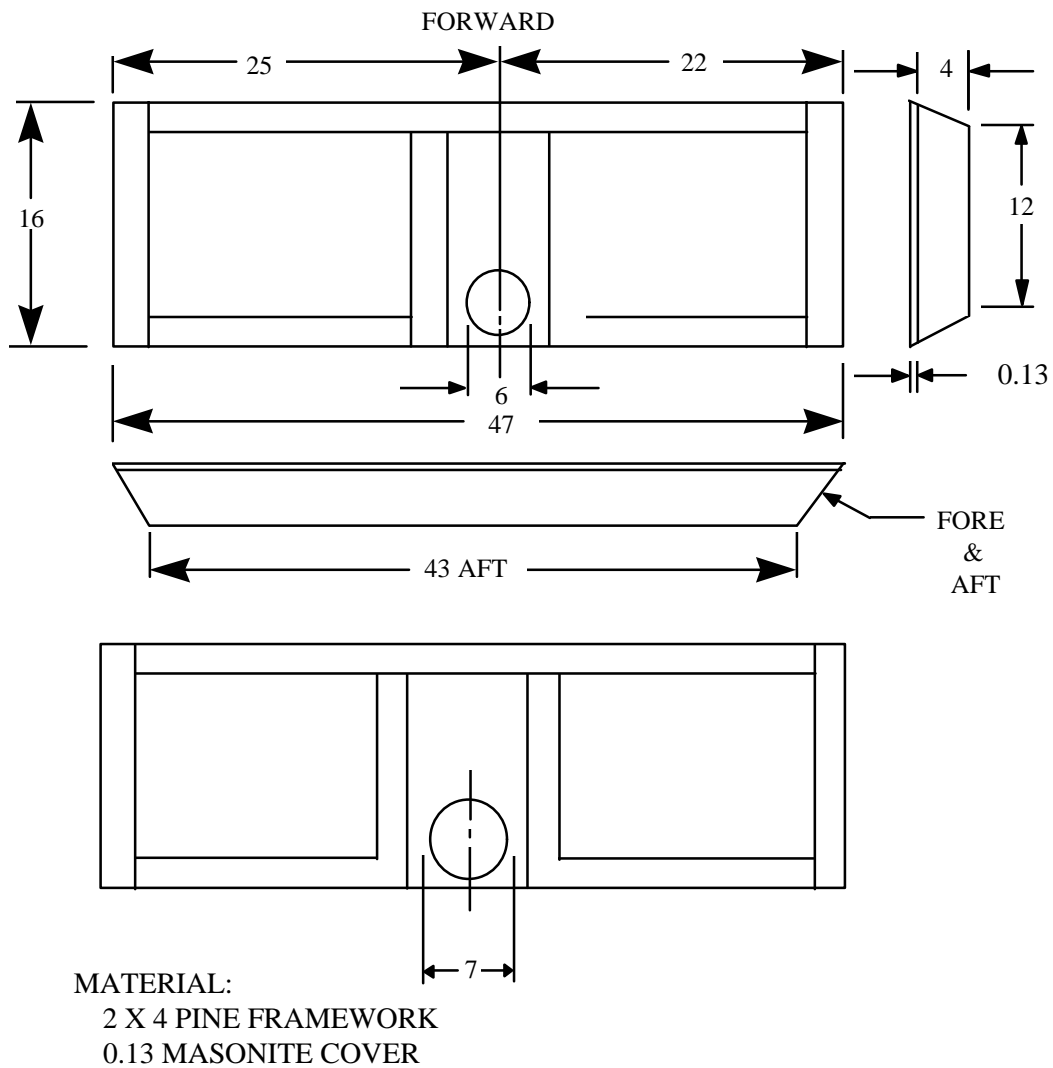
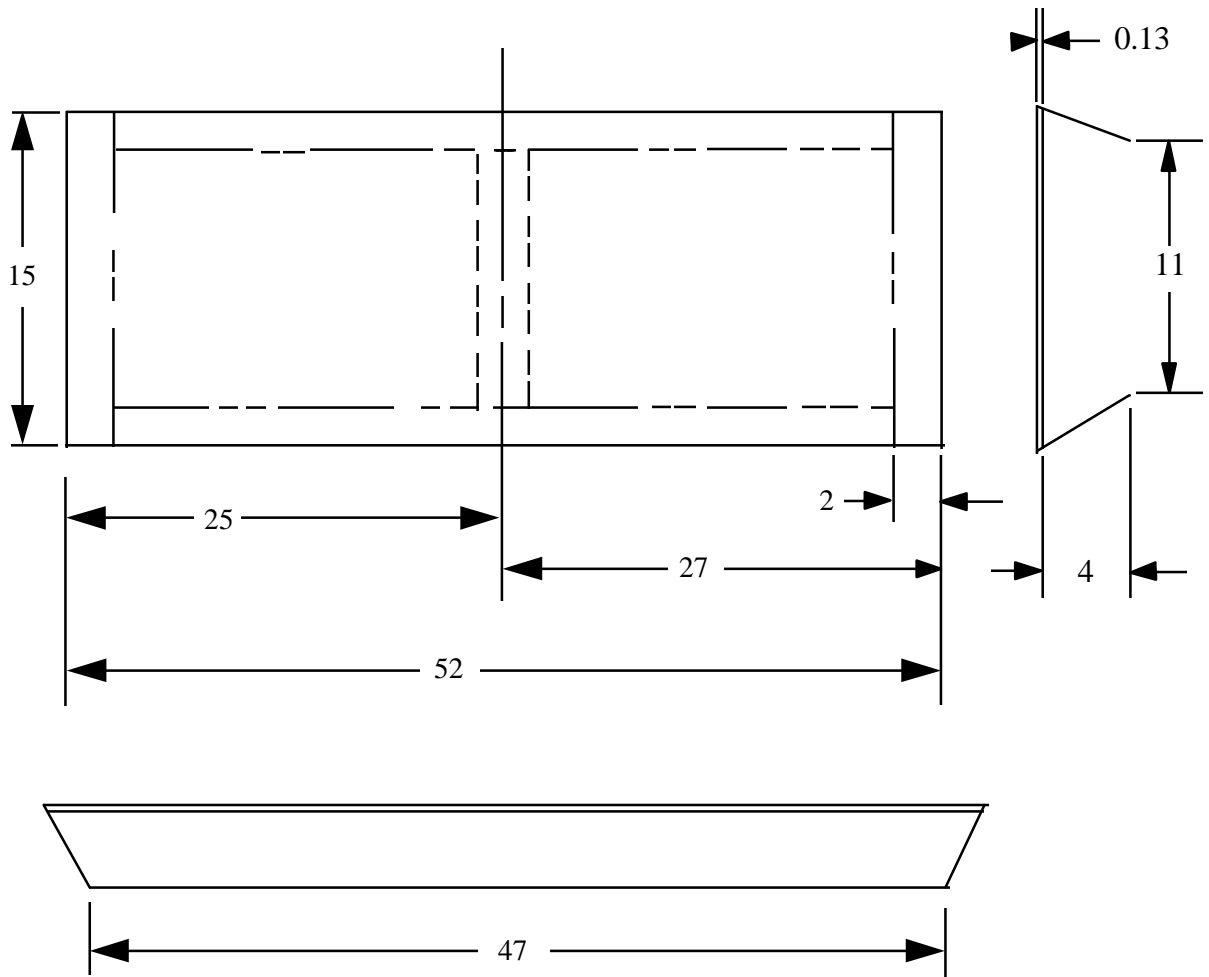


FIGURE 8. M26-M30A1 turret gunnery trainers-
right fore & aft lower stand openings.



MATERIAL:
 2X4 PINE
 0.13 MASONITE COVER

FIGURE 9. M26-M30A1 turret gunnery trainers - right & left intermediate lower stand openings.

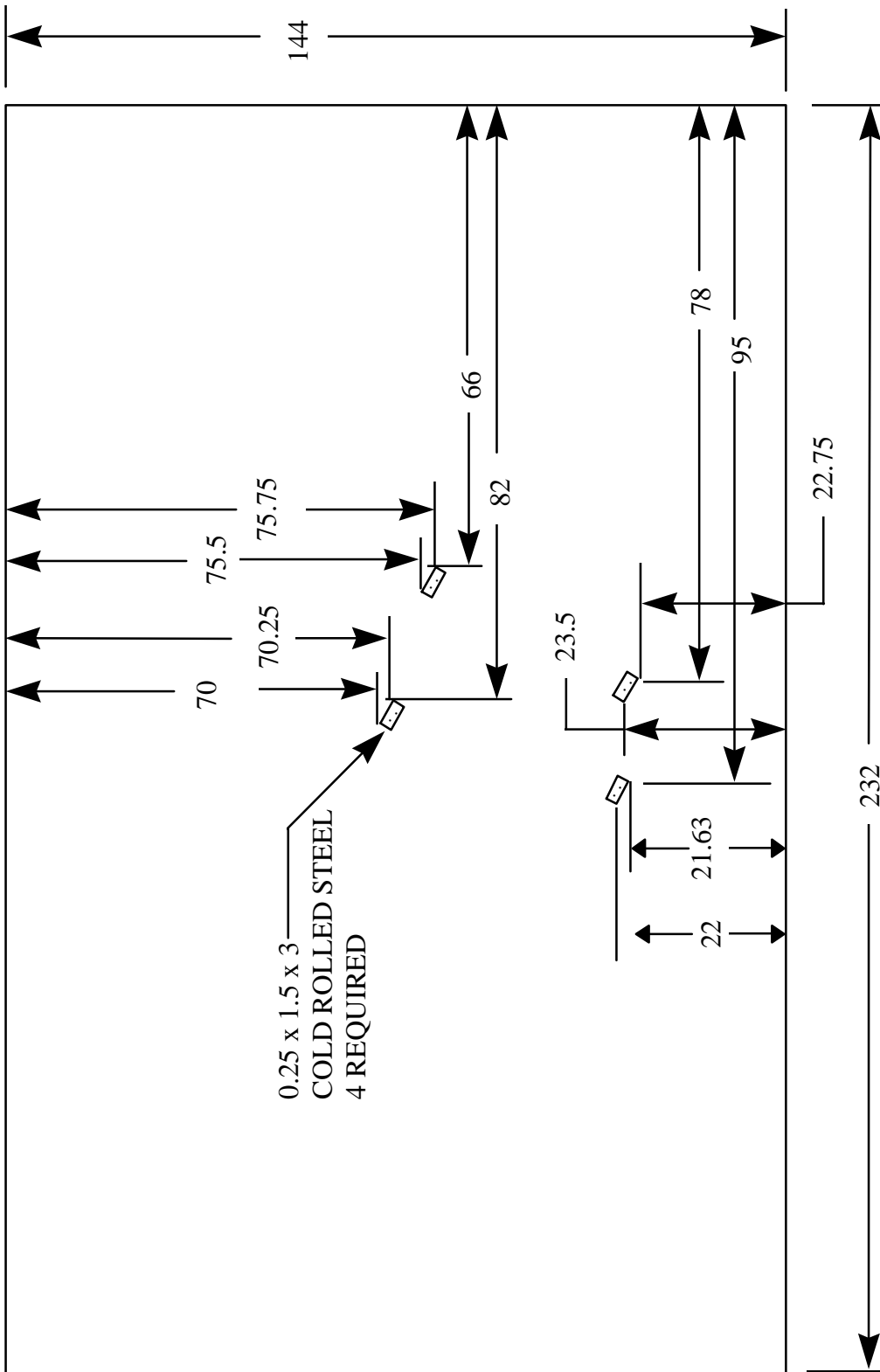


FIGURE 10. M30A1 turret gunnery trainer - rectifier box strapping retainers (see figure 28).

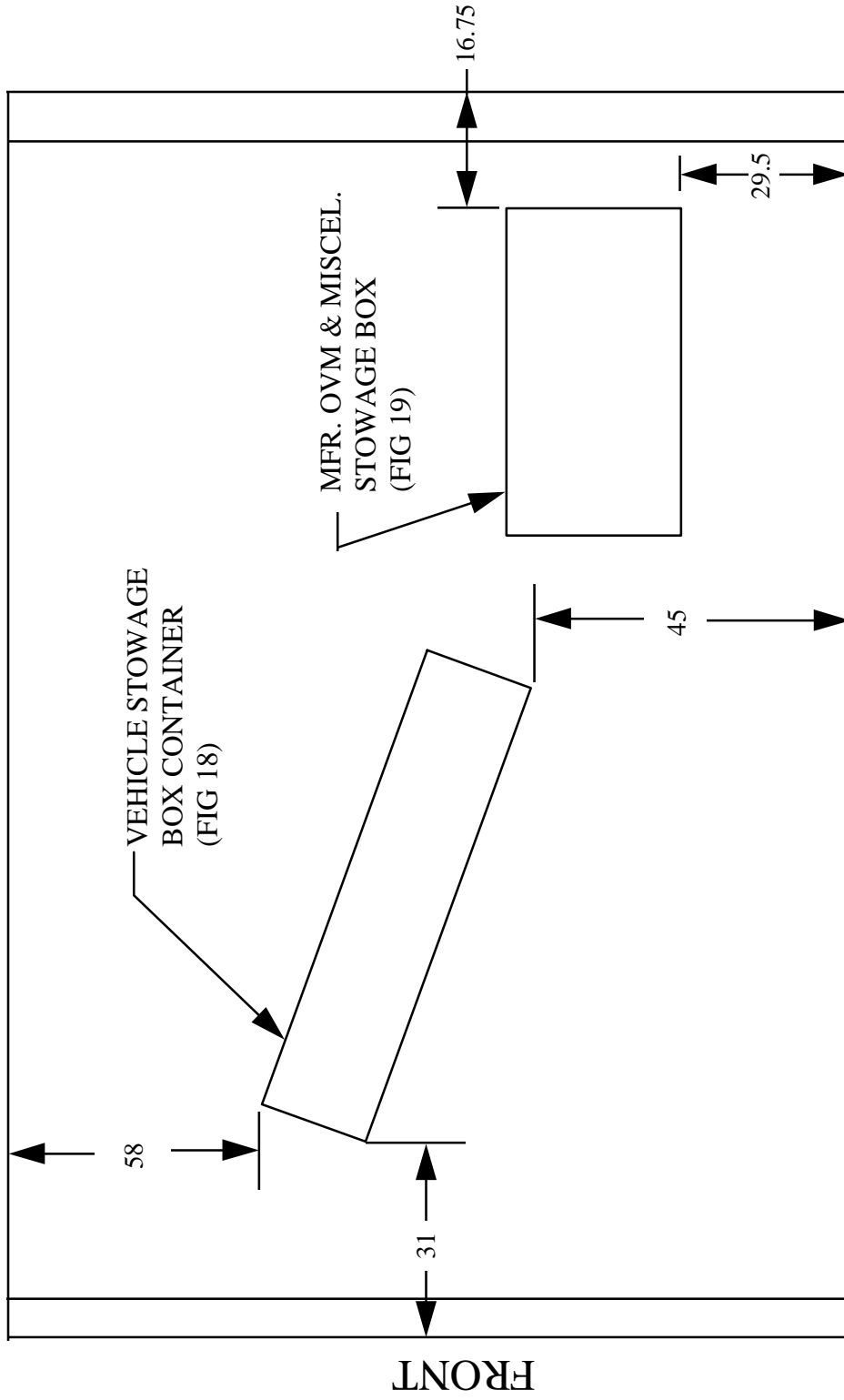


FIGURE 11. M30A1 turret gunnery trainer - stowage box location on shipping skid

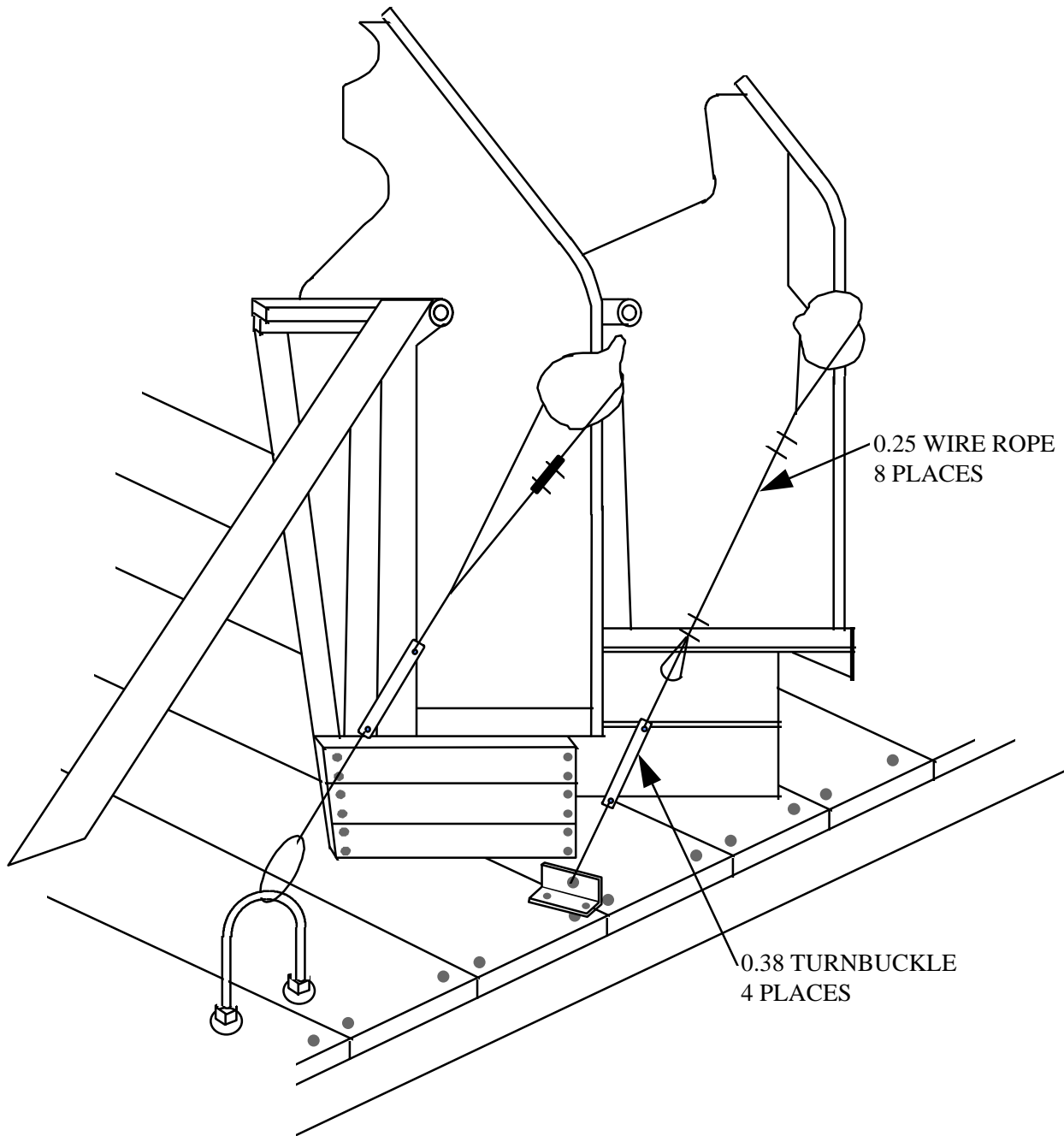


FIGURE 12. M26-M30A1 turret gunnery trainers - observation
platform support and tie-down (see figures 20-22)

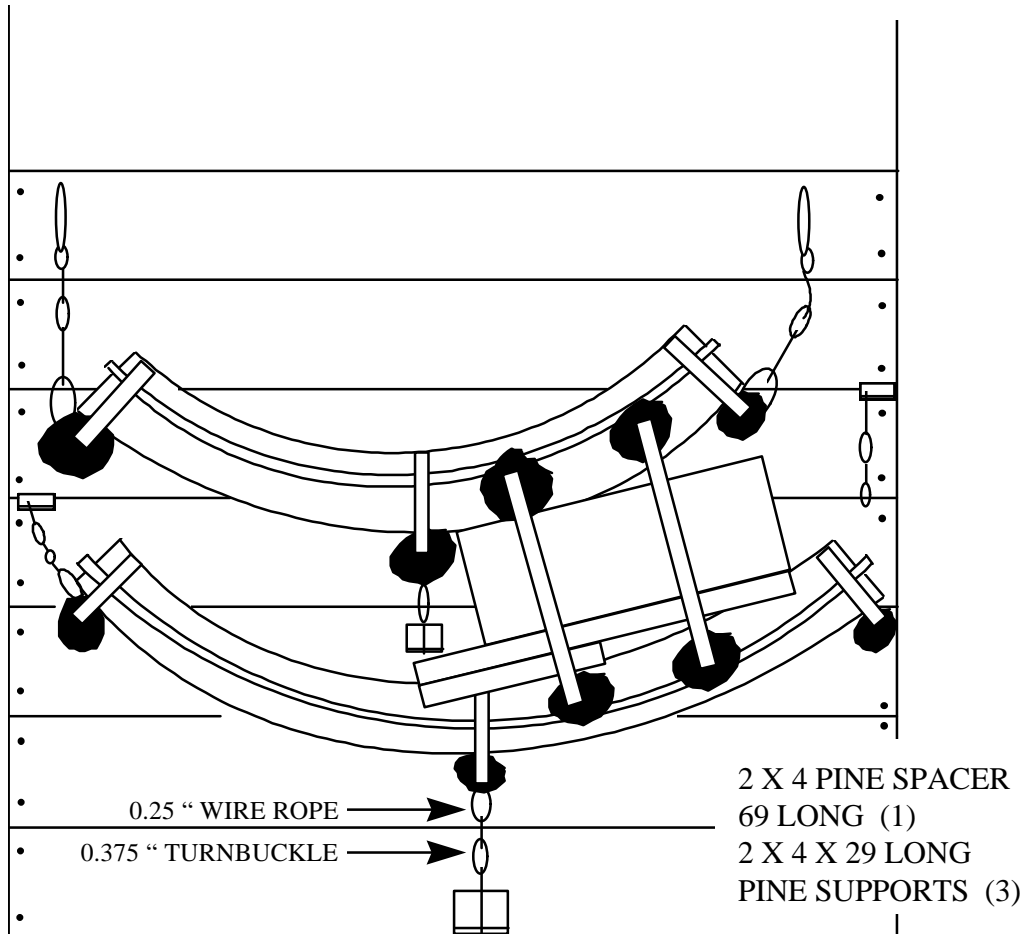
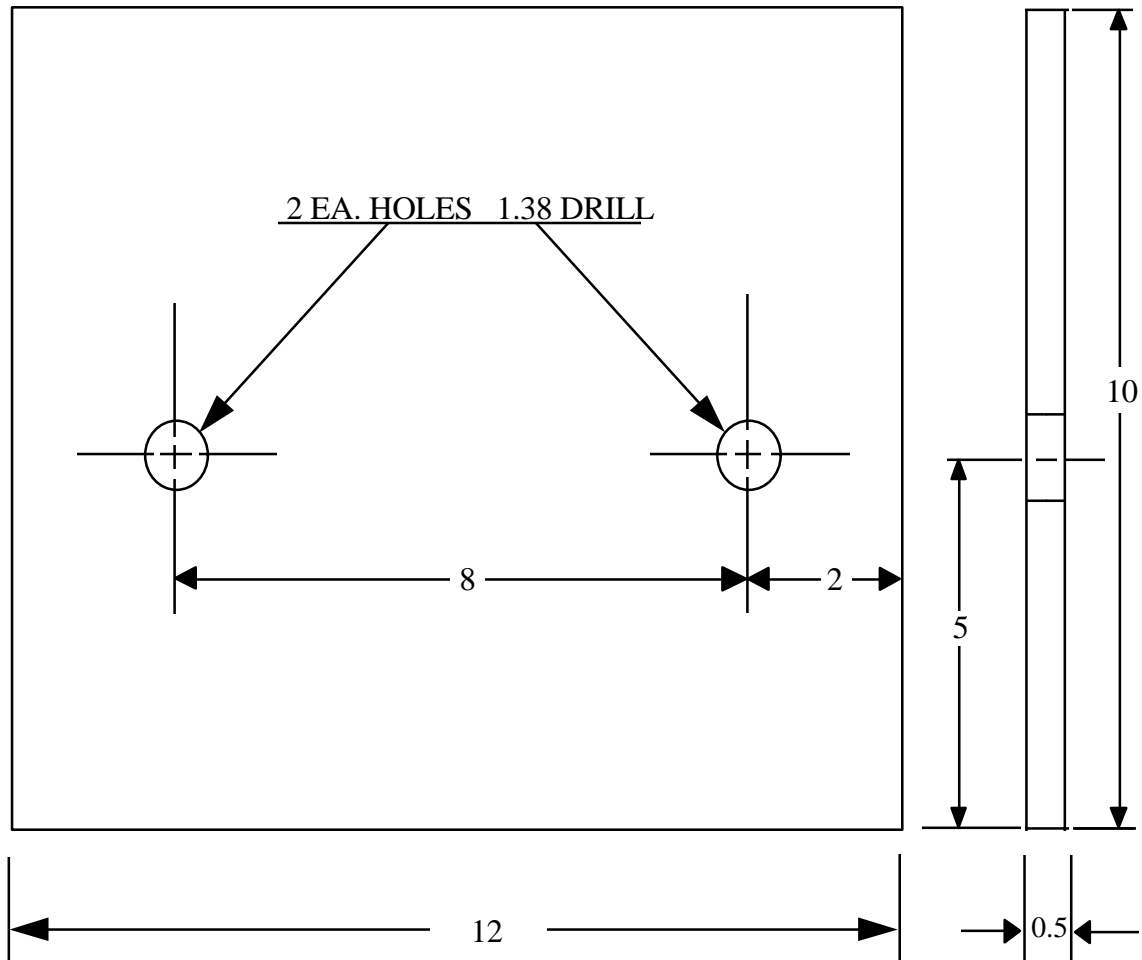
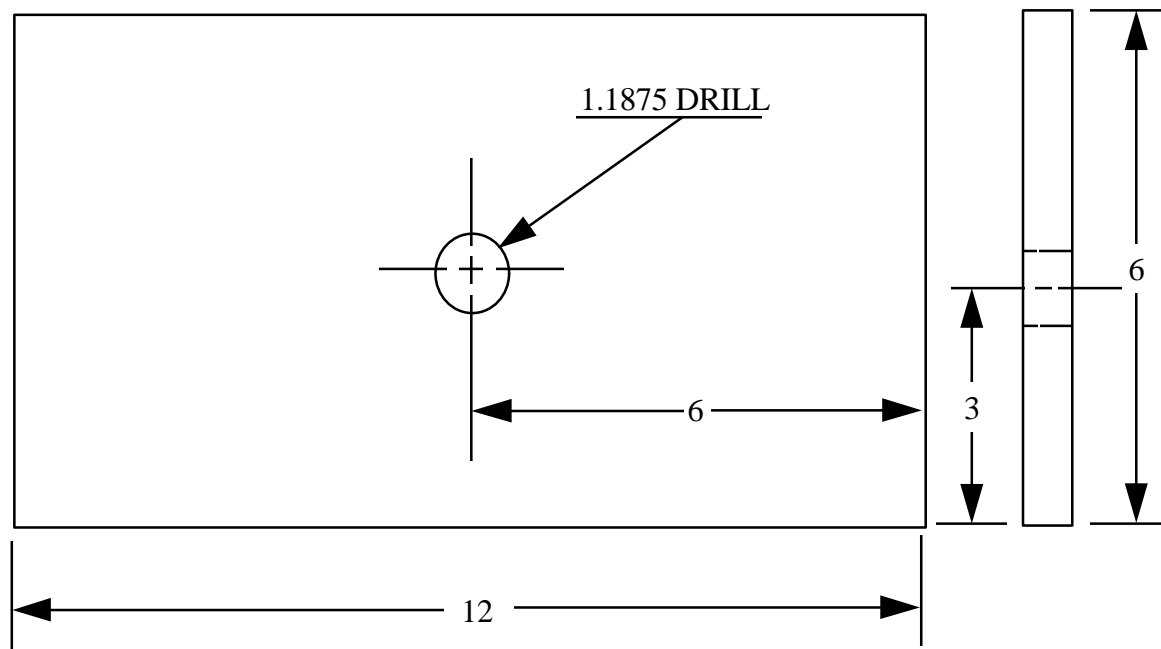


FIGURE 13. M30A1 turret gunnery trainer - platform tie-down to shipping skid and depot OVM mount on stowed platforms (see figure 33).



MATERIAL:
COLD ROLLED STEEL
0.5 THICK

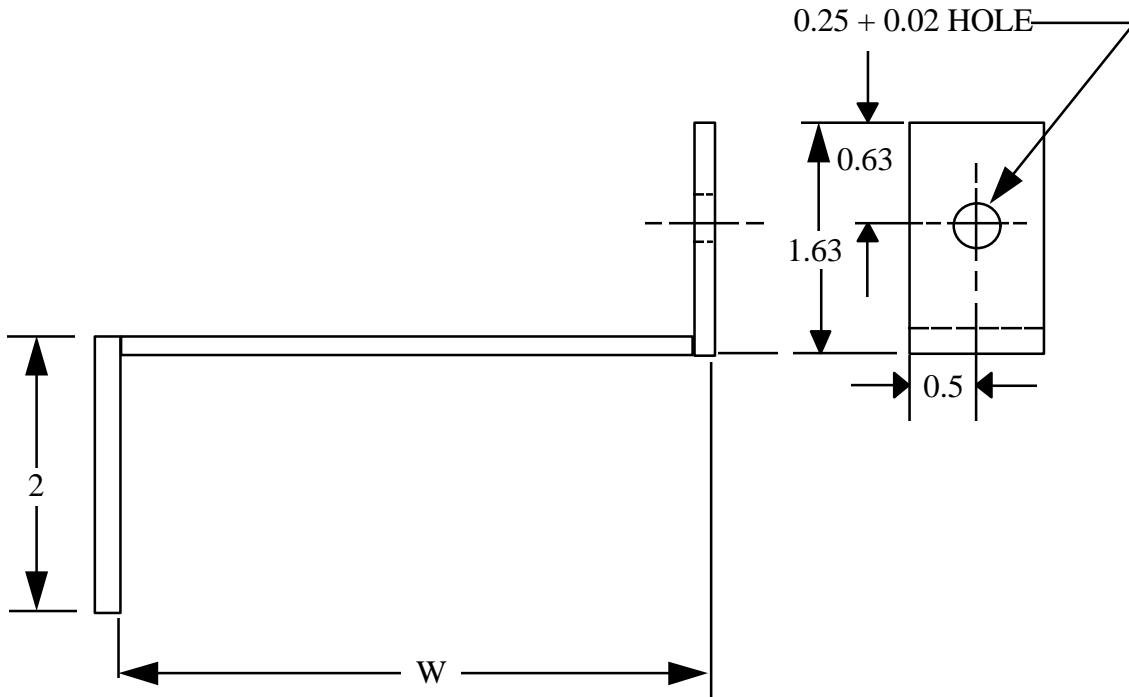
FIGURE 14. M26-M30A1 turret gunnery trainers - reinforcing plates under turret tie-downs (see figure 3).



MATERIAL:
COLD ROLLED STEEL
0.5 THICK

FIGURE 15. M26-M30A1 turret gunnery trainers - reinforcing plates,
turret stand to shipping skid (see figure 4).

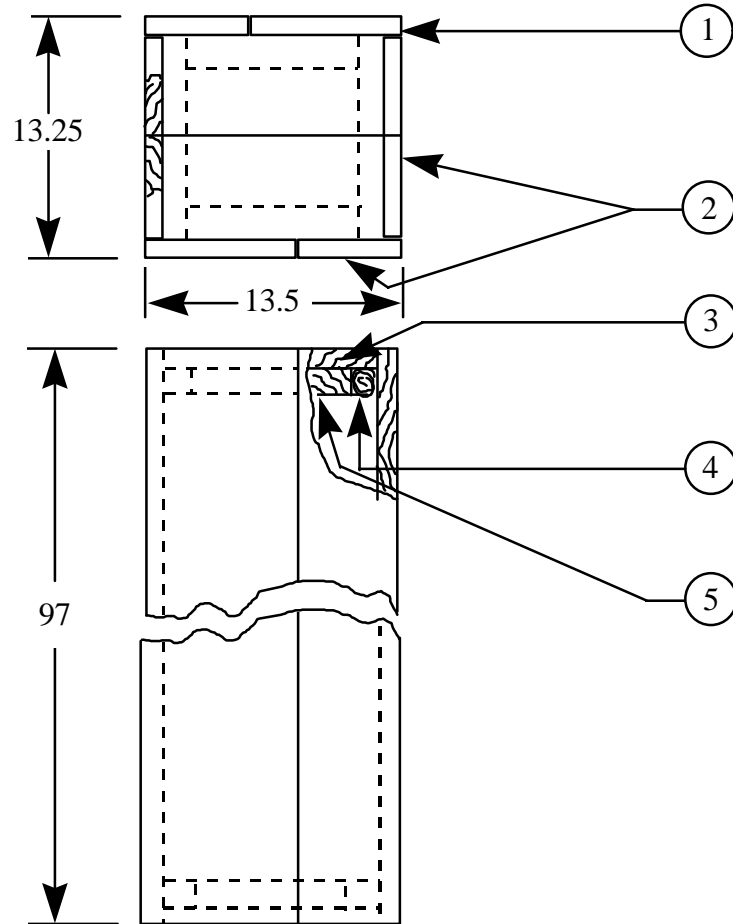
32



W = THE WIDTH DETERMINED BY THICKNESS
OF TURRET AT MOUNTING POINT

MATERIAL:
COLD ROLLED STEEL
0.13 X 1.0 X 8.5 LONG

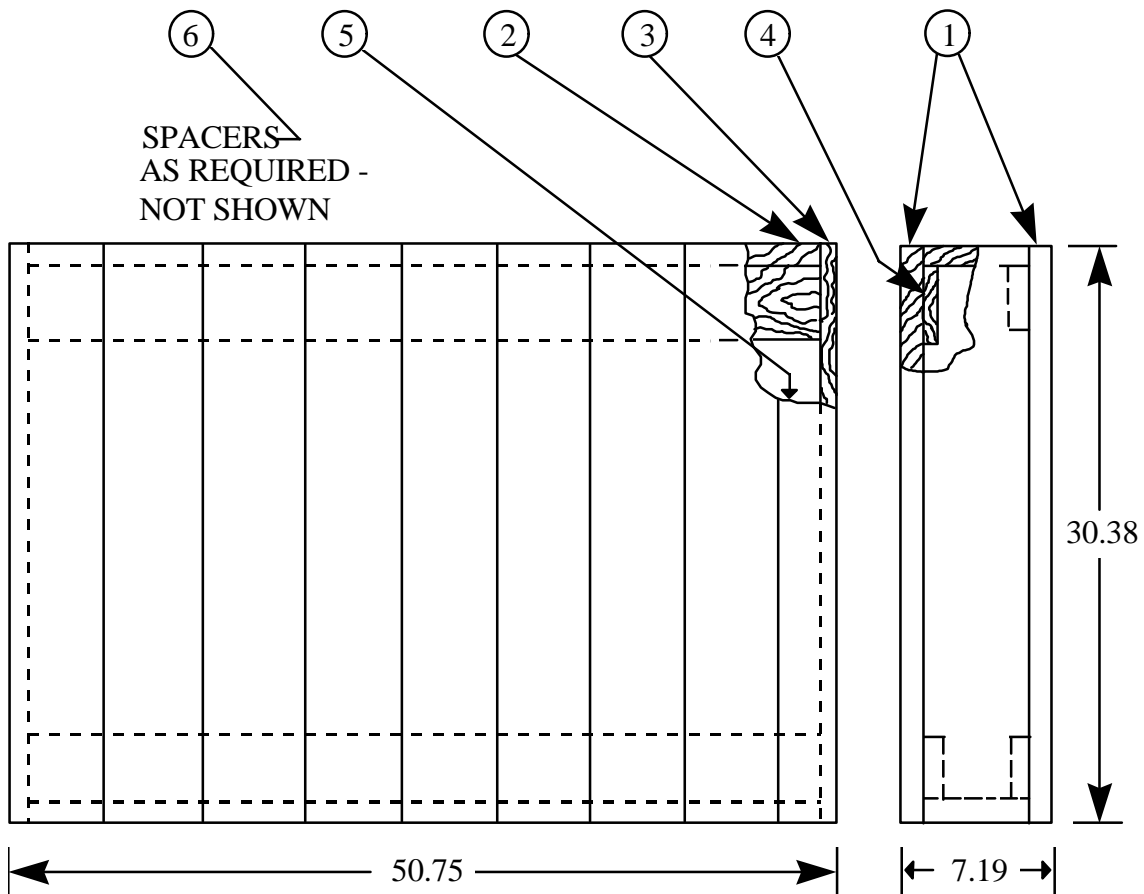
FIGURE 17. M26-M30A1 turret gunnery trainers -
port closure retaining bracket.



MATERIAL:
PINE

ITEM	SIZE	QUANTITY
1	1 X 8 X 97	2
2	1 X 6 X 97	6
3	1 X 6 X 12	4
4	2 X 4 X 12	4
5	2 X 4 X 8	4

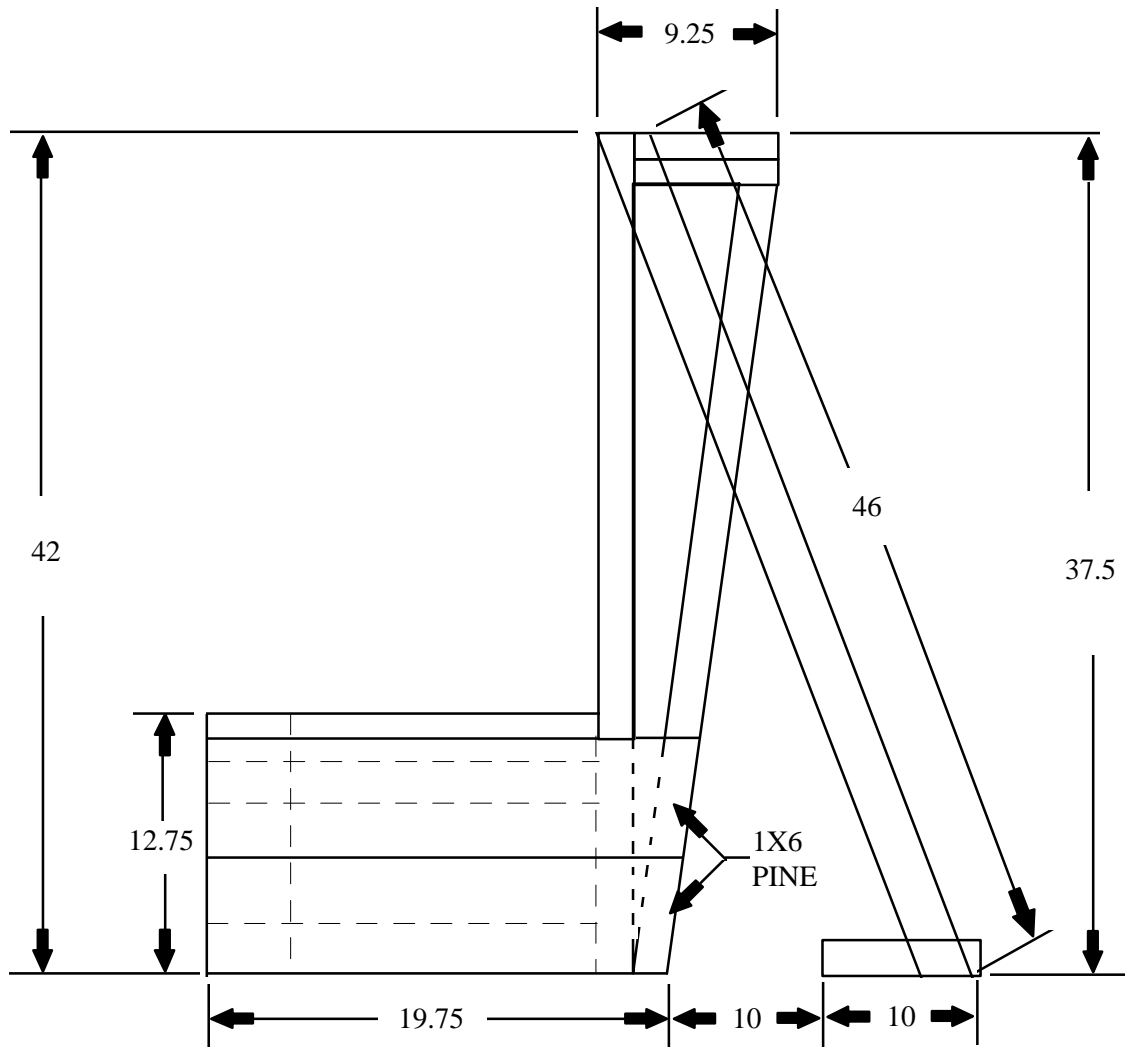
FIGURE 18. M26-M30A1 turret gunnery trainers - stowage box shipping container (see figure 11).



MATERIAL:
PINE

ITEM	SIZE	QUANTITY
1	1 X 6 X 30.38	16
2	1 X 6 X 49	2
3	1 X 6 X 30.38	2
4	1 X 4 X 49	4
5	1 X 5 X 30.38	2
6	2 X 4 X TO SUIT	TO SUIT

FIGURE 19. M26-M30A1 turret gunnery trainers - stowage box - manufacturer's OVM (see figure 11).

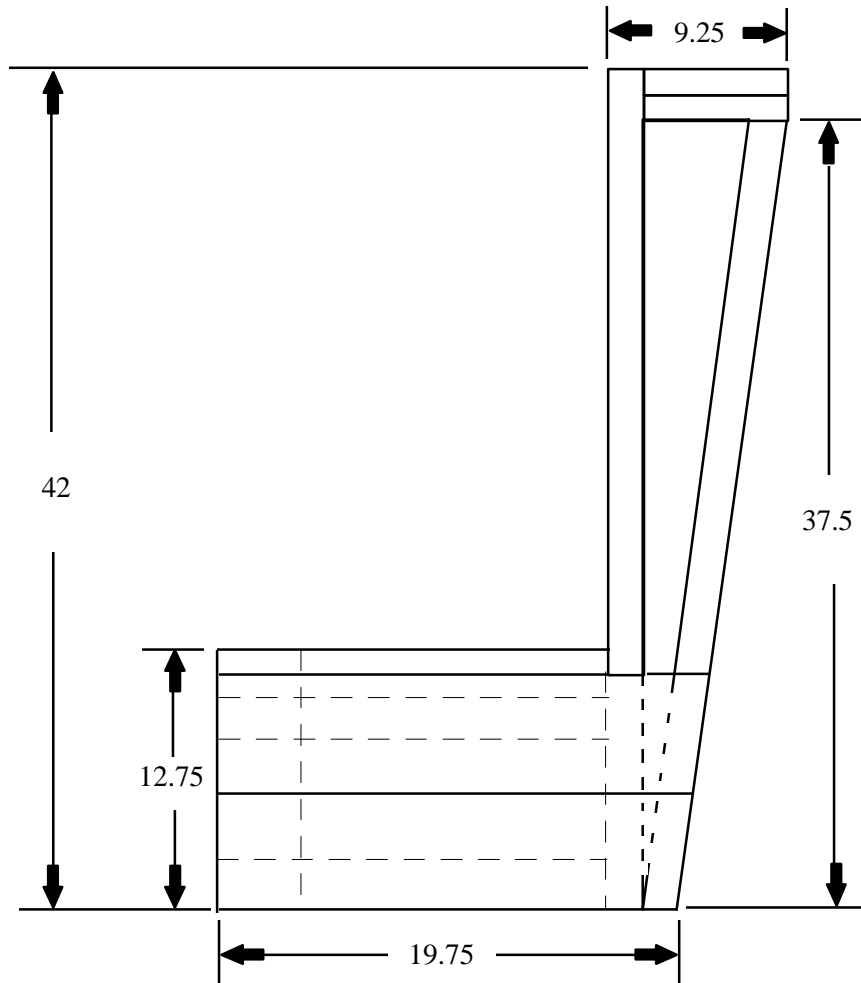


MATERIAL:

2x4 PINE 19 FT

1x6 PINE 5 FT

FIGURE 20. M26-M30A1 turret gunnery trainers- left and right end supports, turret platform, left shown.



MATERIAL:
2 x 4 PINE.....14 FT
1 x 6 PINE.....4 FT

FIGURE 21. M26-M30A1 turret gunnery trainers-
center support, turret platform.

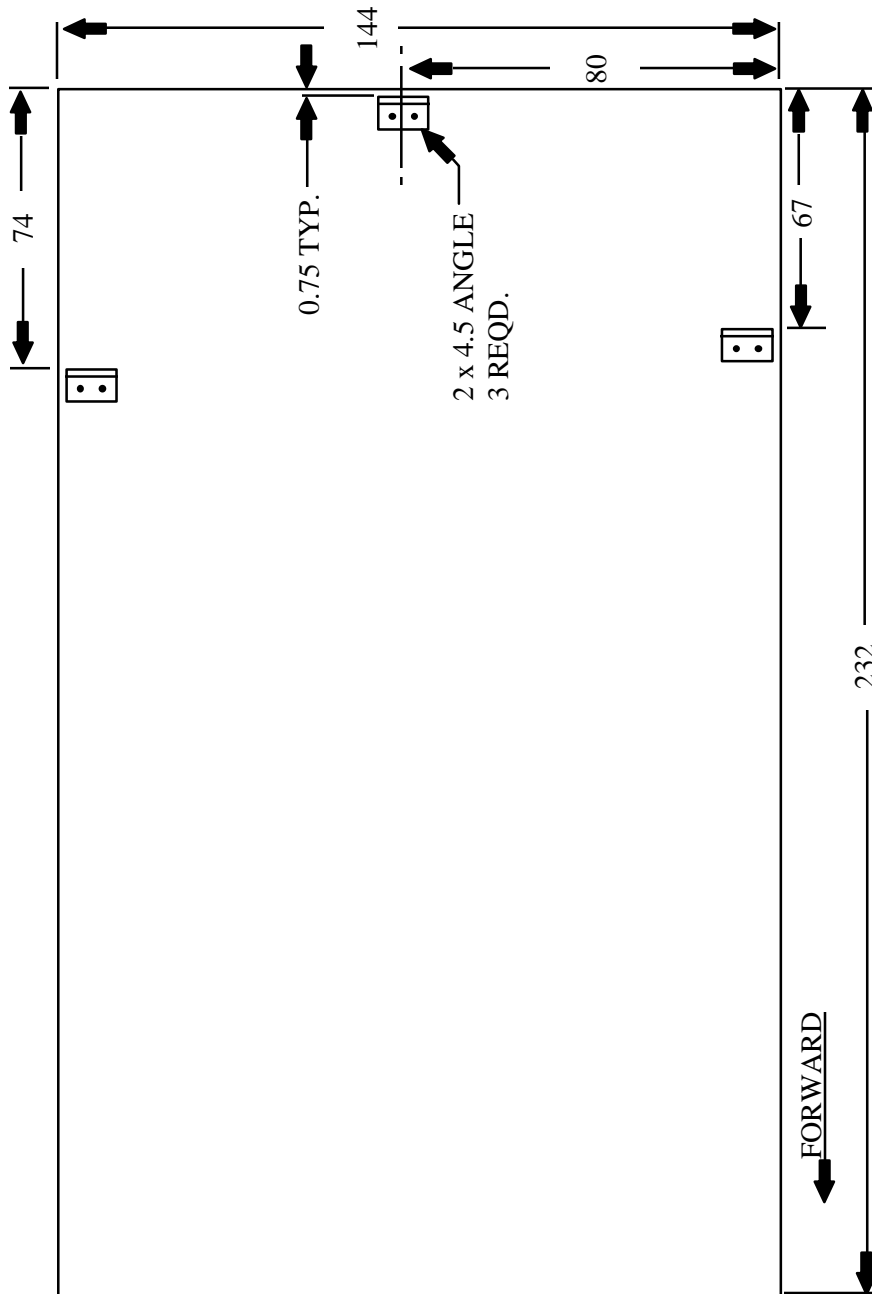


FIGURE 22. M30A1 turret gunnery trainer- shipping skid tie-downs.

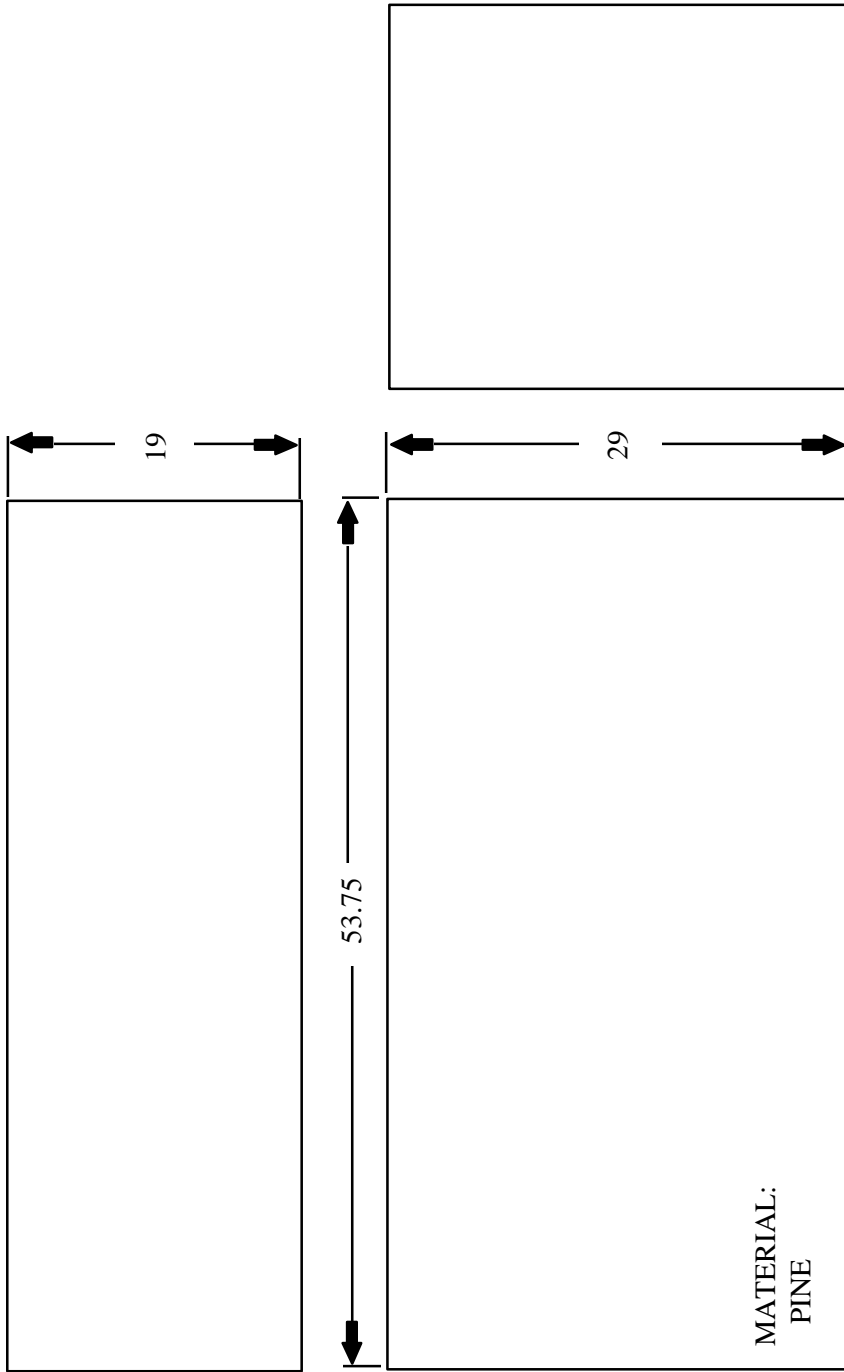


FIGURE 23. M26-M30A1 turret gunnery trainers - depot OVM box -
shipped as received (see figure 33).

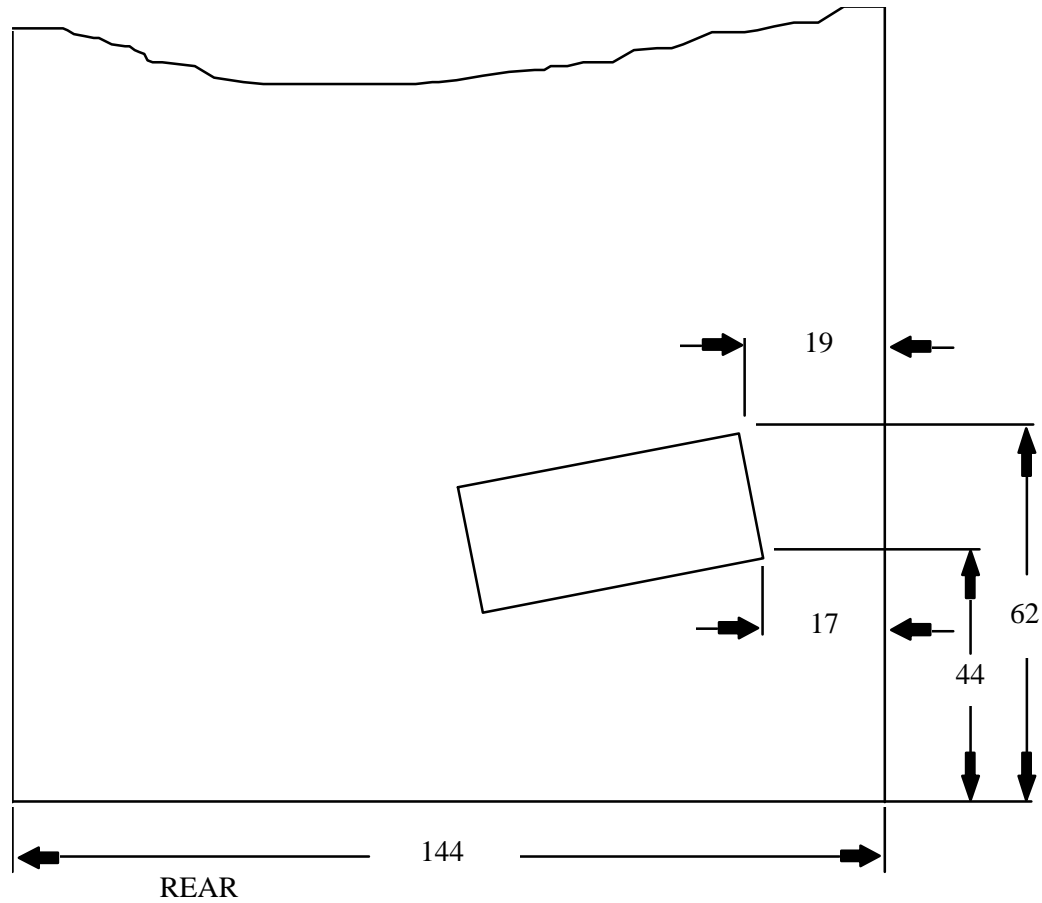


FIGURE 24. M30A1 turret gunnery trainer- depot OVM mounting on shipping skid (see figures 12 and 33).

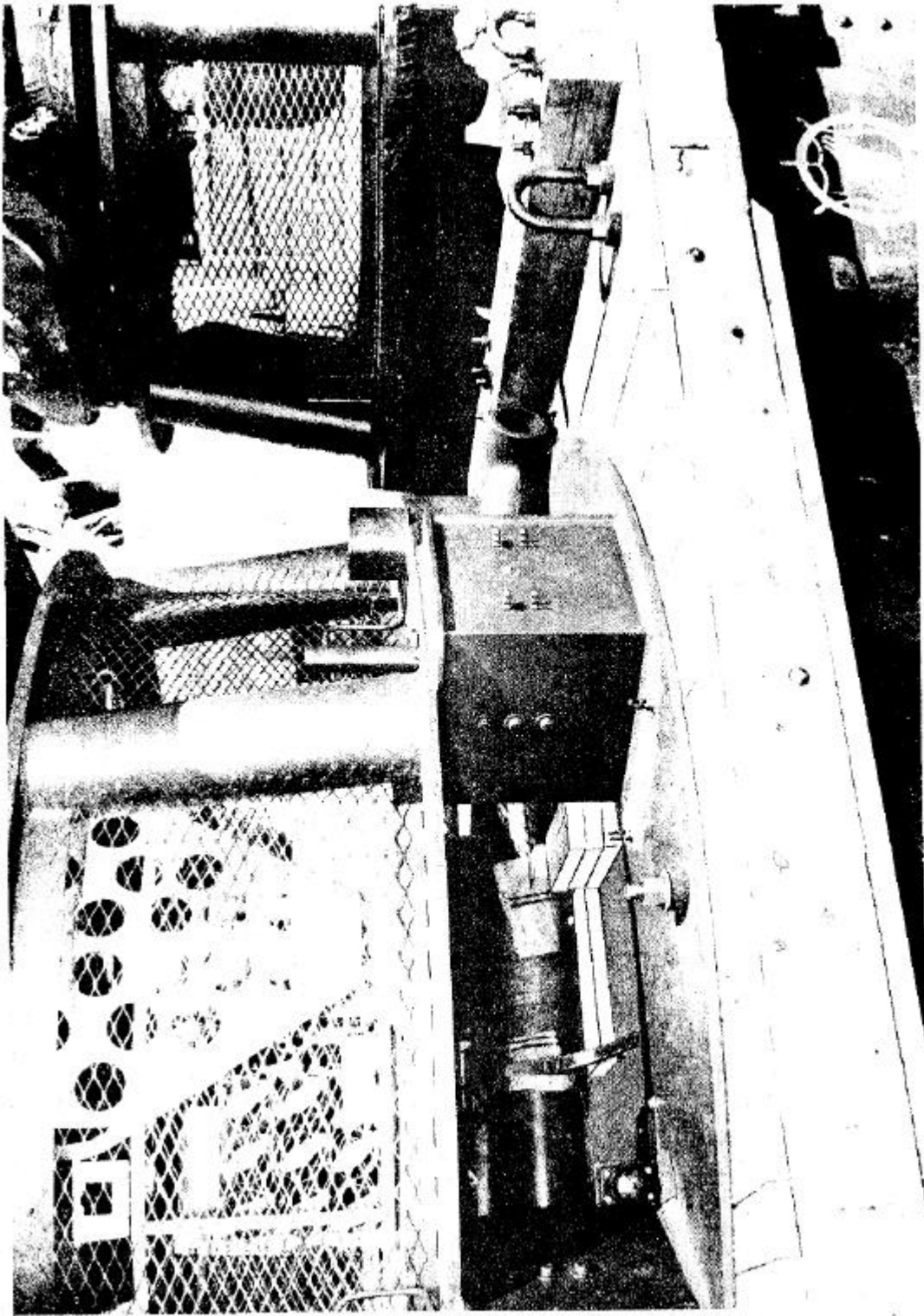


FIGURE 25. M26 turret gunnery trainer mounted on shipping skid for level A and B shipment.

Note blocking and securing of gun tube.

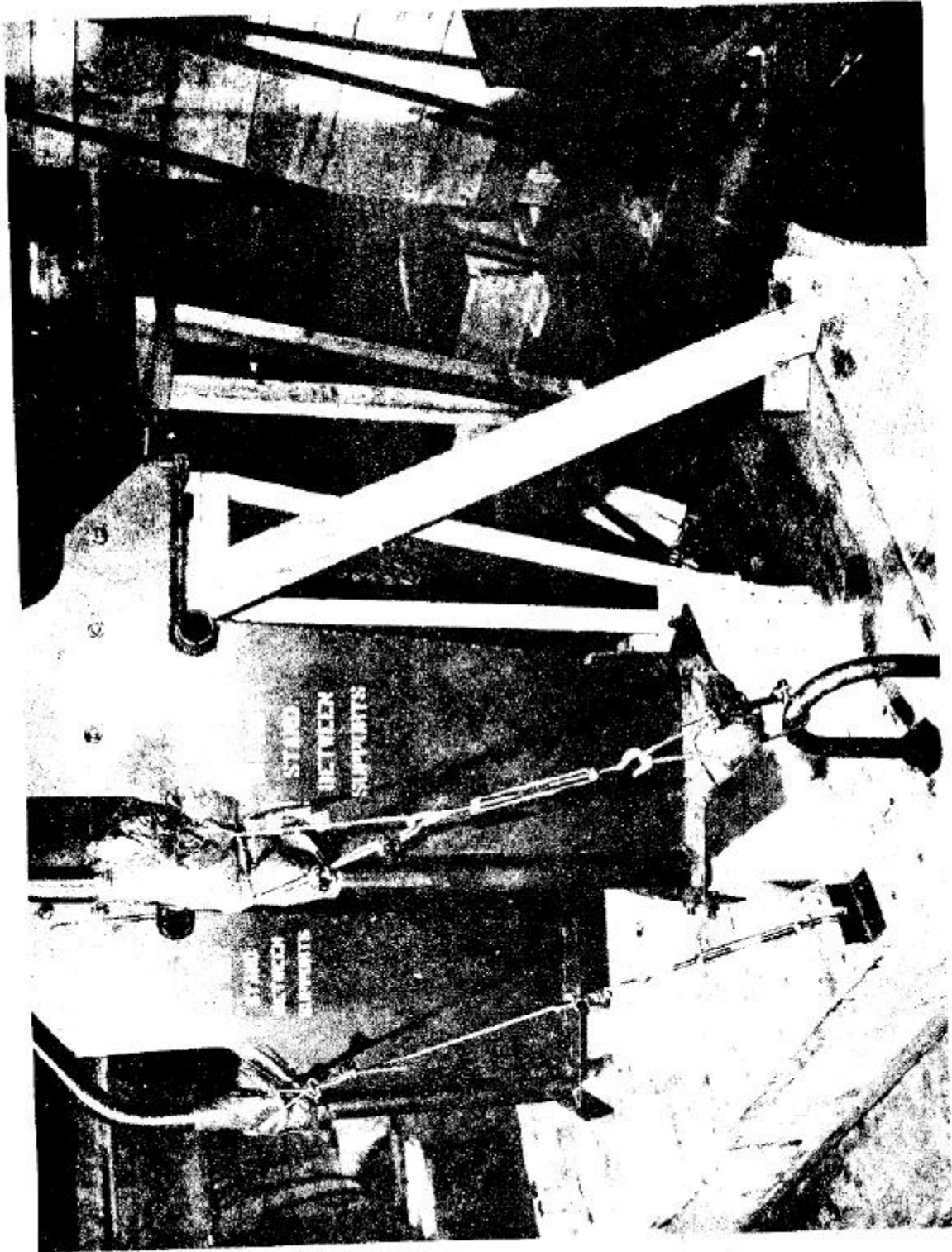


FIGURE 26. M30A1 turret gunnery trainer mounted on shipping skid for level A and B shipment. Note position and securement of observer platforms and M60 gun tube. Also, note the large recycler container on far right-hand side.

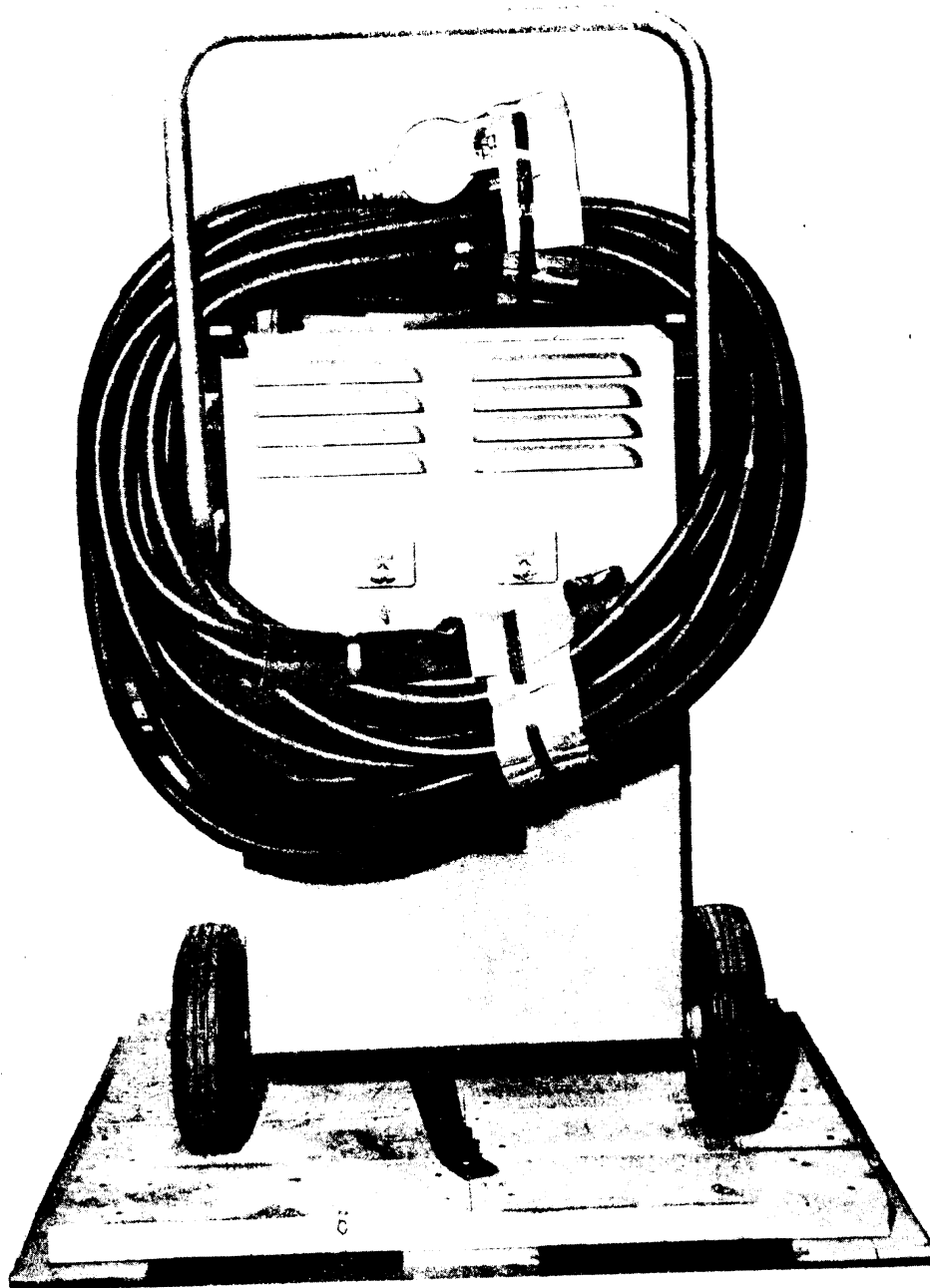


FIGURE 27. Power rectifier, with operating cable, anchored on container base.

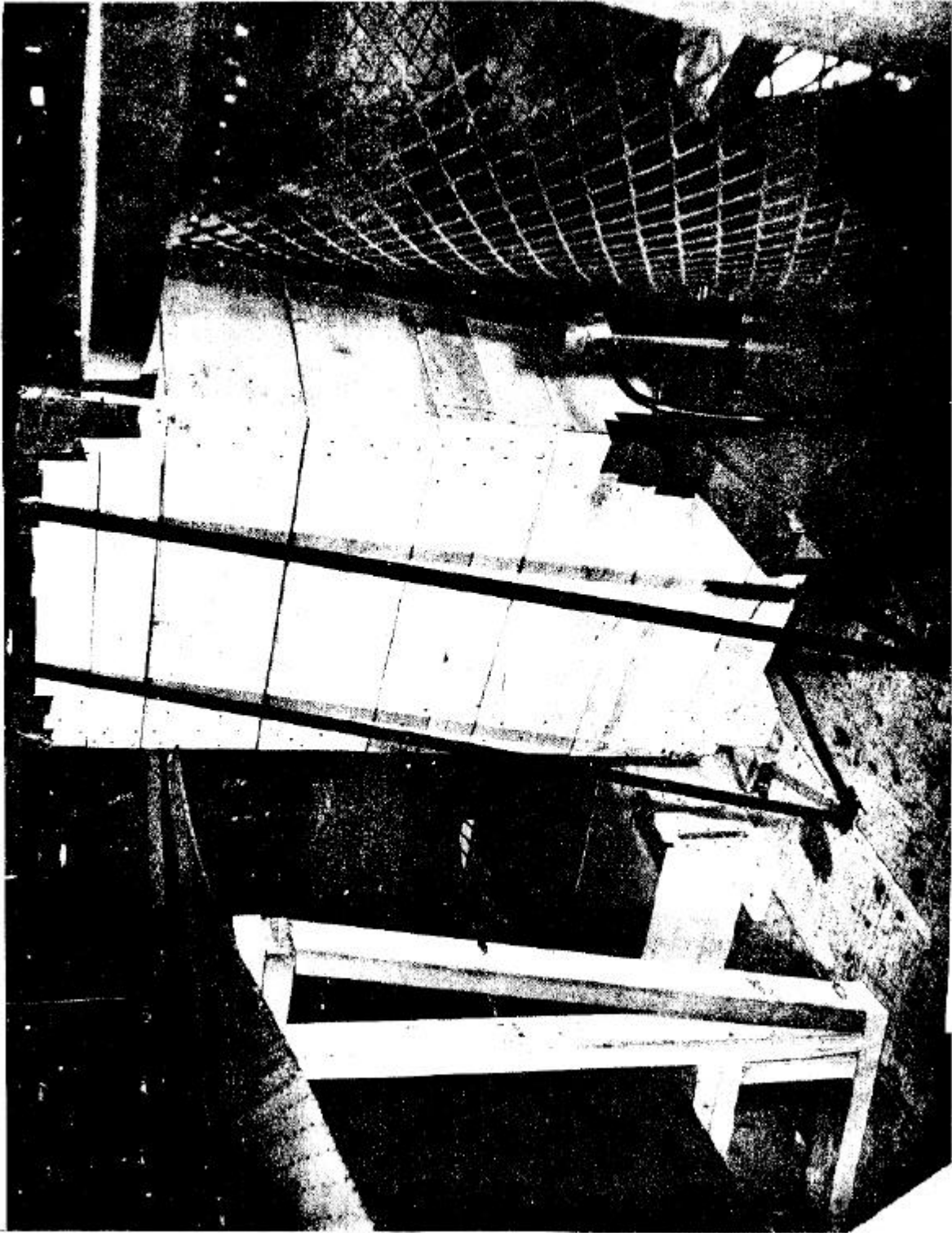


FIGURE 28. Power rectifier mounted and secured on M30A1 turret gunnery trainer shipping skid.

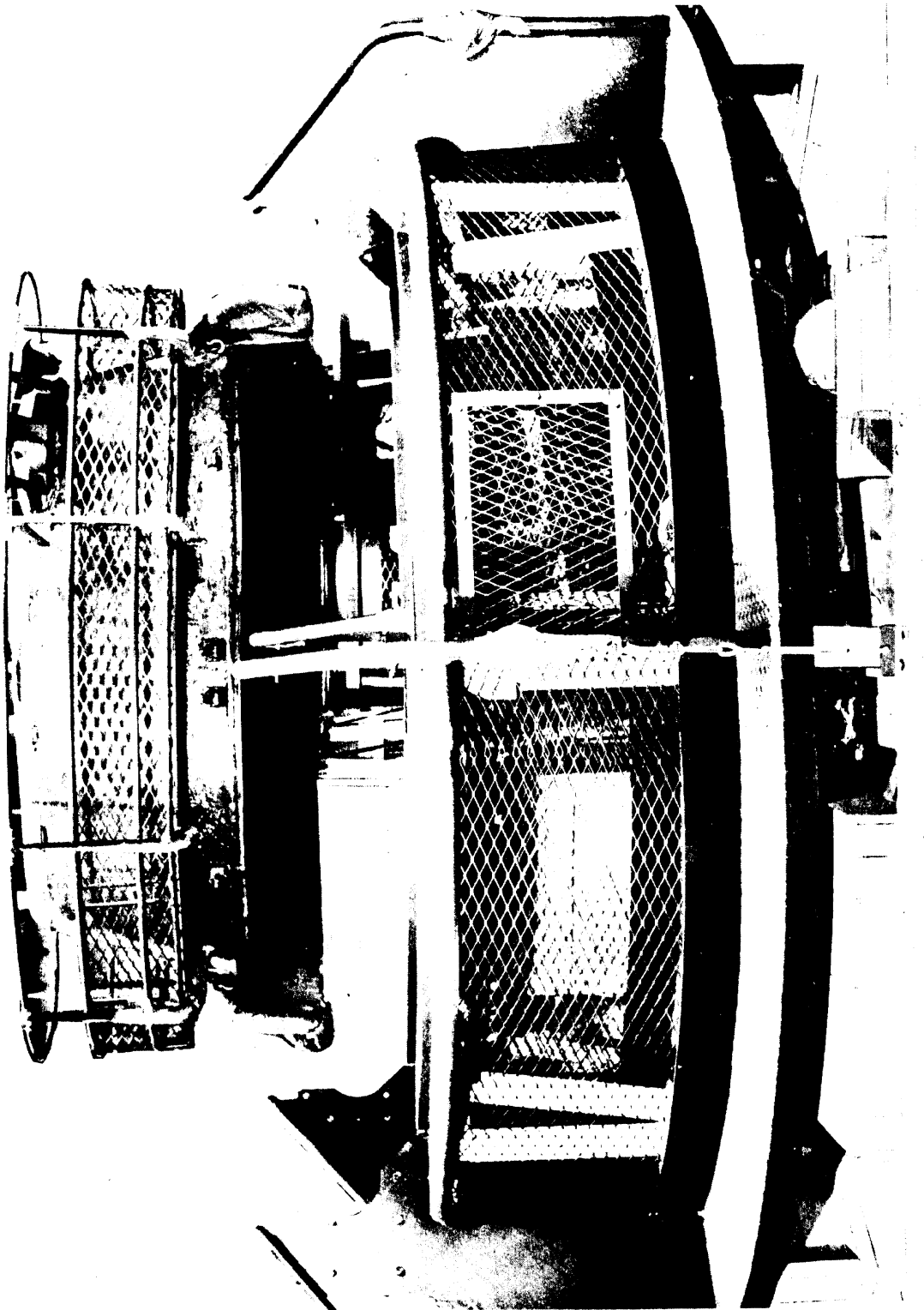


FIGURE 29. M30A1 turret gunnery trainer mounted on shipping skid for level A and B shipment.

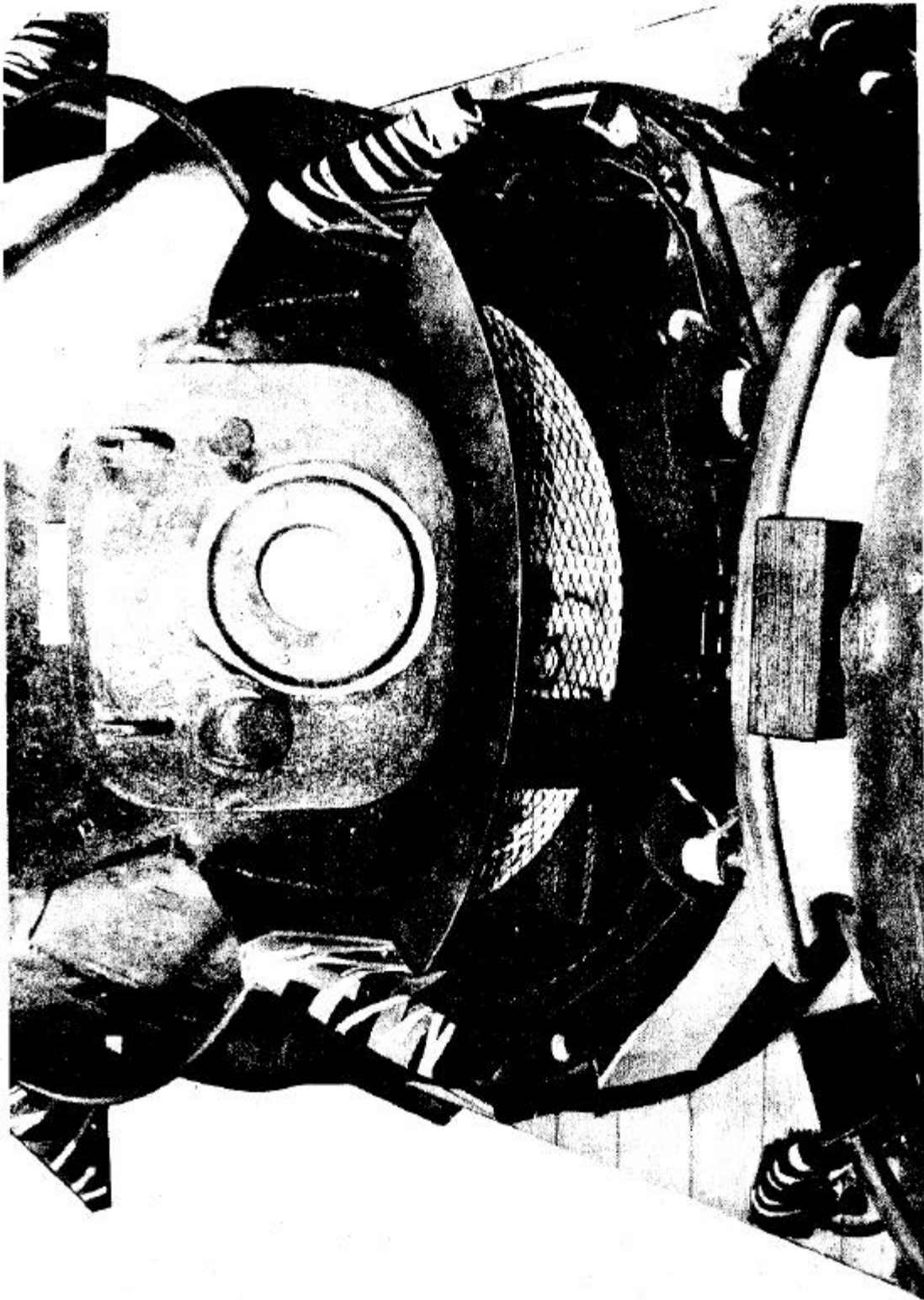


FIGURE 30. M30A1 turret gunnery trainer gun mount blocking in place between mantlet and turret.

Also, note sealing and cushioning in place.

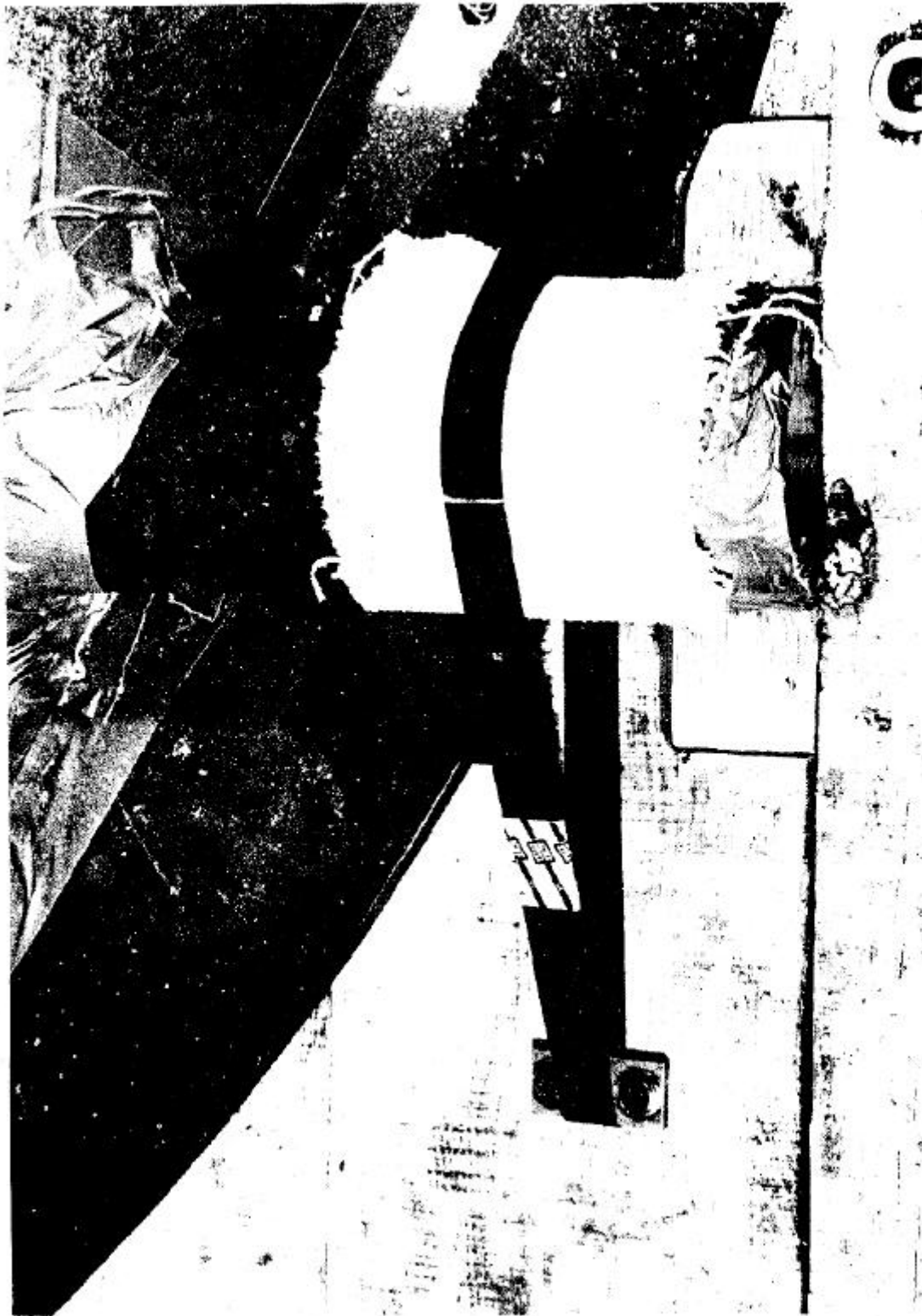


FIGURE 31. Turret gunnery trainer gun tube sealed, cushioned, blocked and strapped in place on shipping skid.

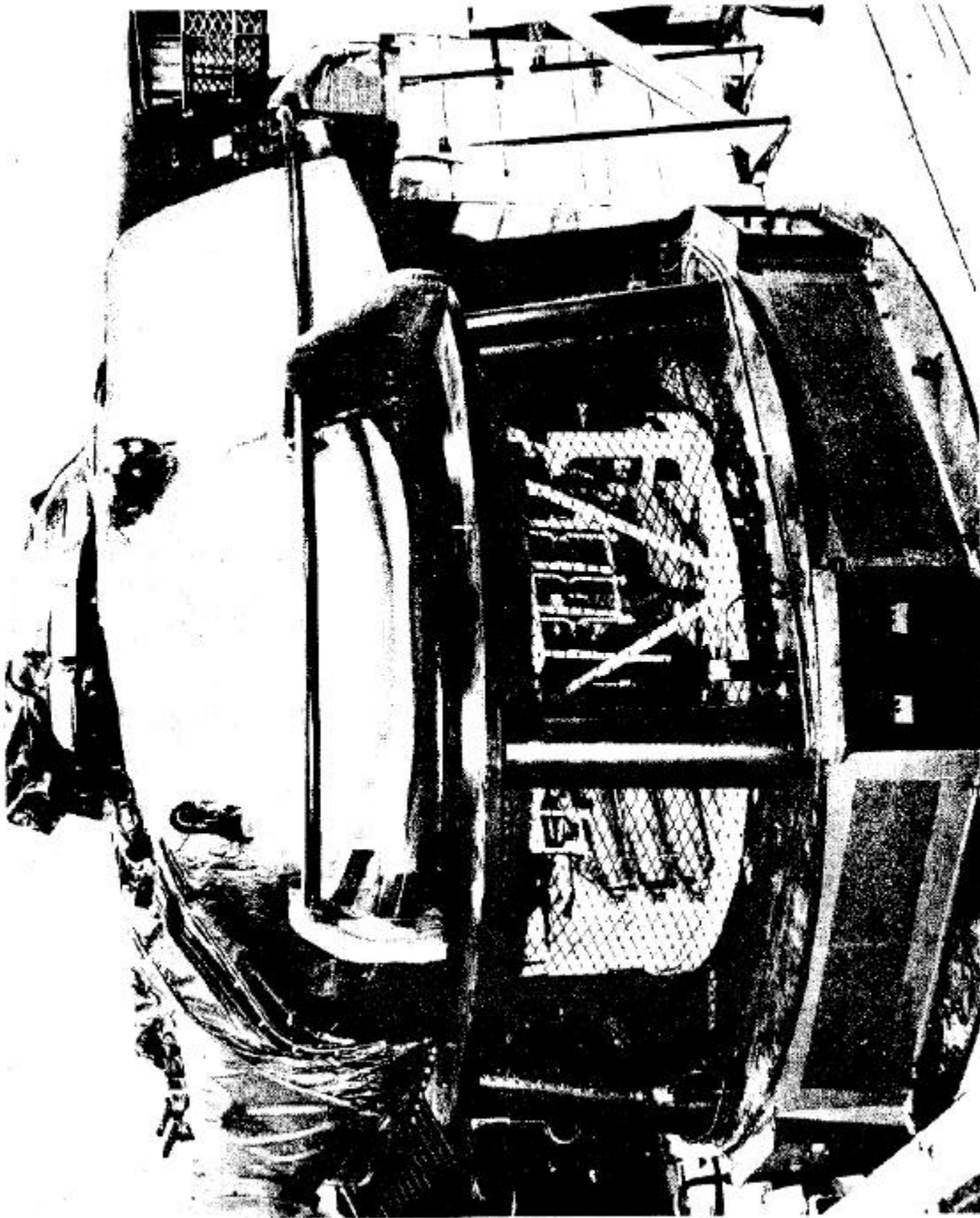


FIGURE 32. Turret gunnery trainer showing bottom openings closed. Note turret openings have also been closed.



FIGURE 33. M30A1 turret gunnery trainer showing observer platforms and OVM box secured in place.

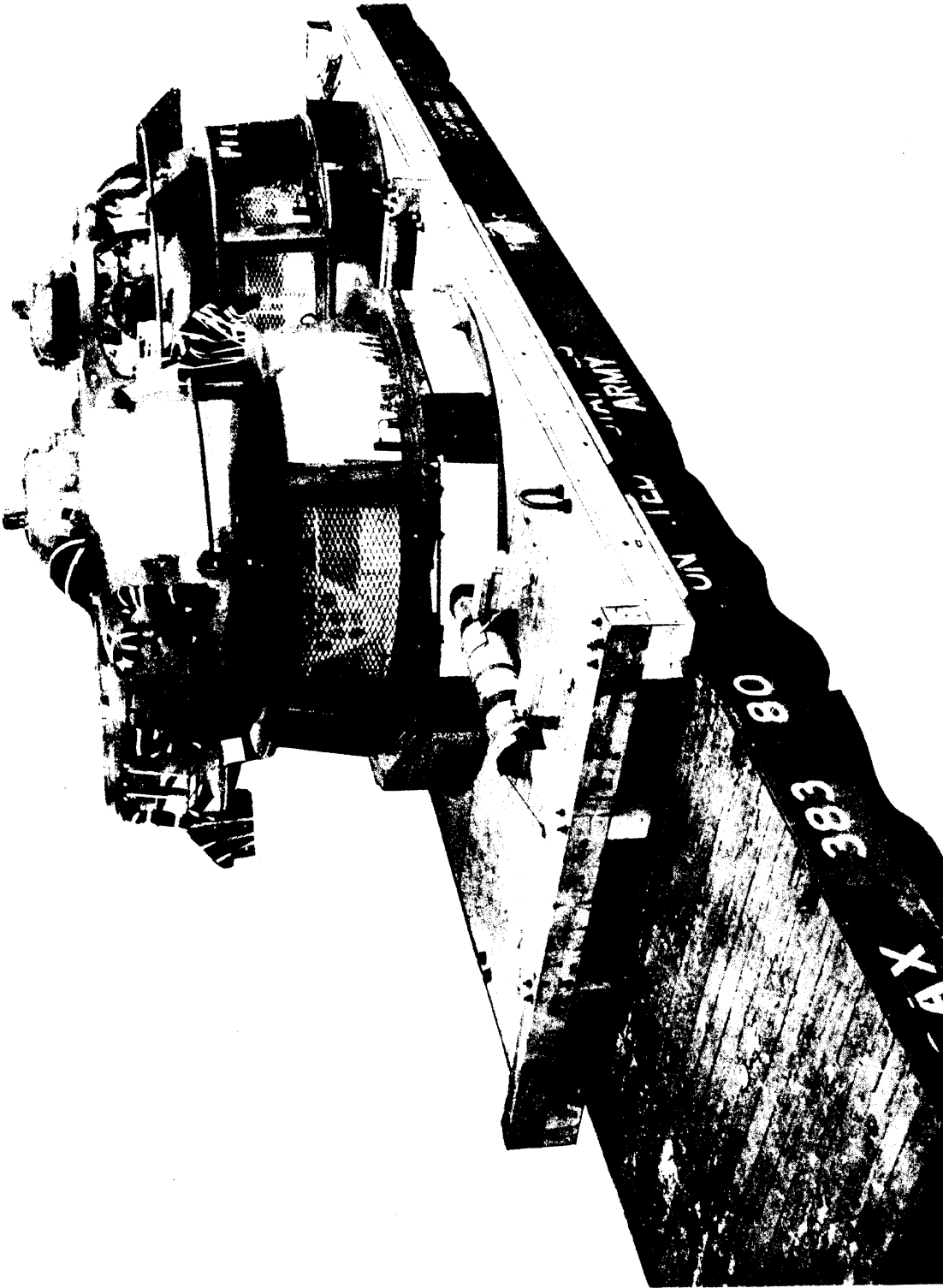


FIGURE 34. M26 turret gunnery trainer showing bottom openings and turret openings closed.

Also, one of the screened openings is closed. All the screened area will be closed.

Also note, cushioning in place and gun tube blocked and secured.

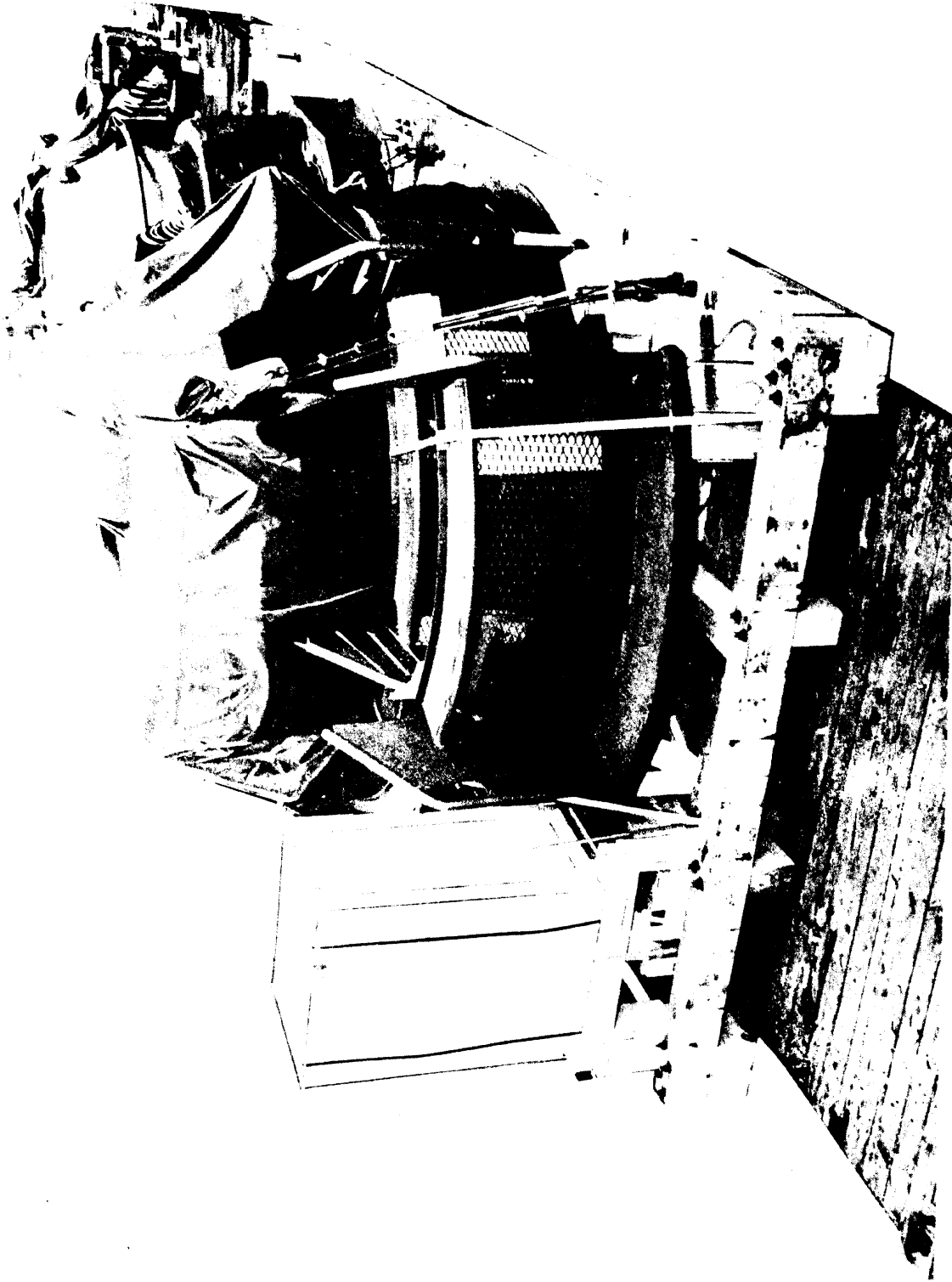


FIGURE 35. M26 turret gunnery trainer mounted and ready for railroad car loading. Note rectifier container on left front of shipping skid.

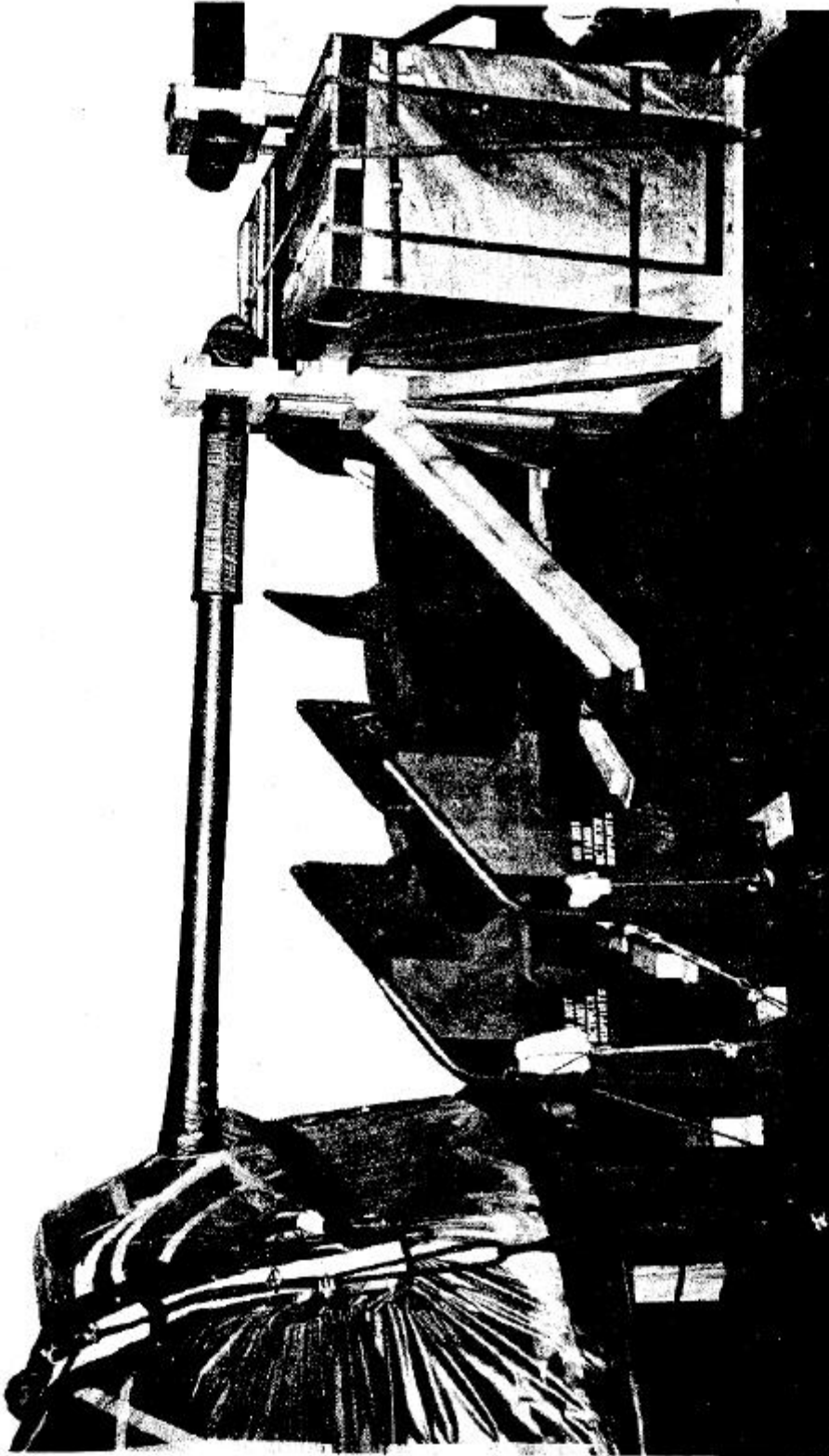


FIGURE 36. Two turret gunnery trainers, four observer platforms and two boxed rectifiers are secured on railroad car for level C shipment. The gun tubes and rectifier containers are blocked and braced with nominal 2x4 and 4x4 lumber. The vertical and angular members are nominal 4x4's. All other members are nominal 2x4's. All members are cut to fit (left side down).

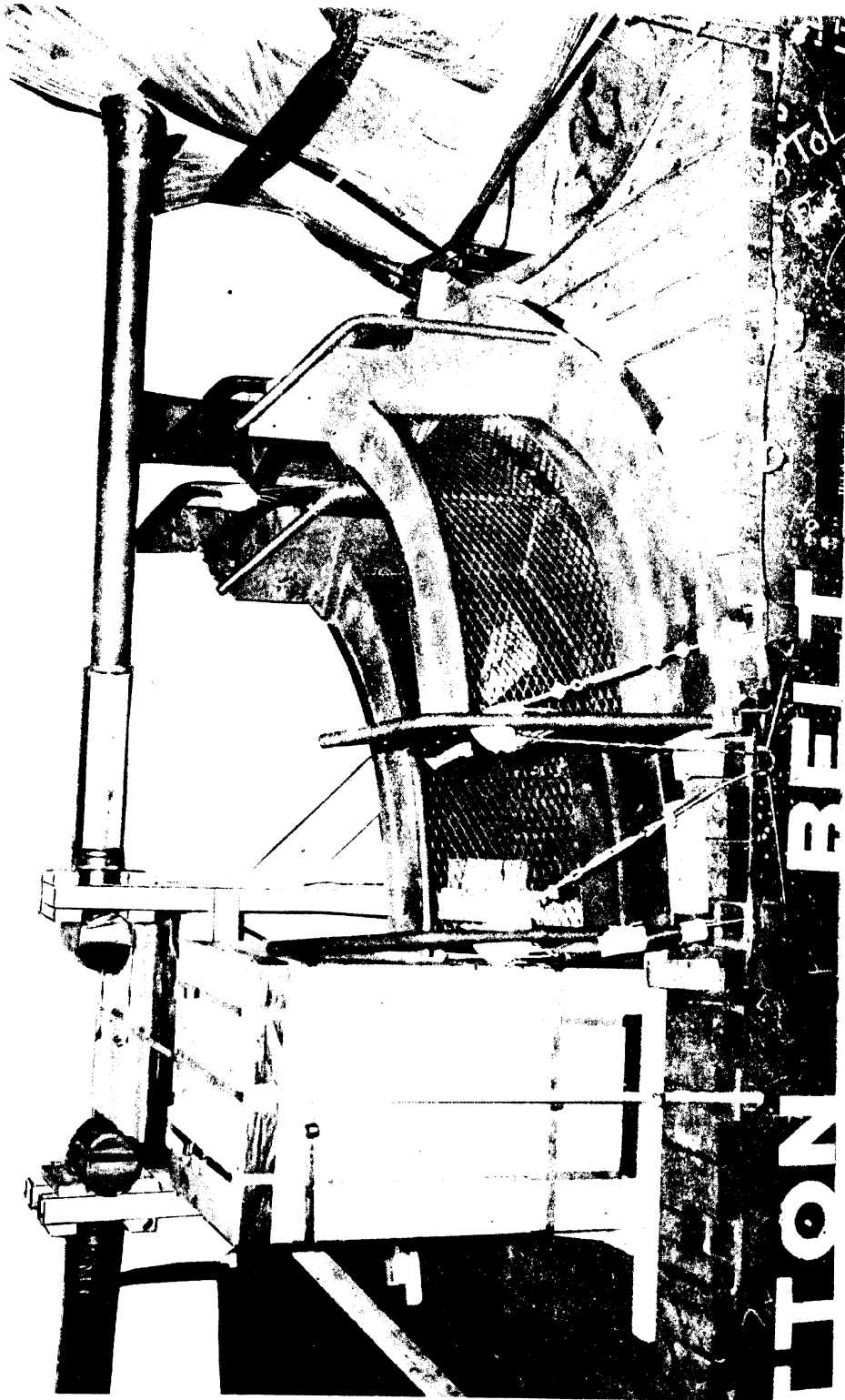


FIGURE 37. Two turret gunnery trainers, four observer platforms and two boxed rectifiers are secured on railroad car for level C shipment. The gun tubes and rectifier containers are blocked and braced with nominal 2x4 and 4x4 lumber. The vertical and angular members are nominal 4x4's. All other members are nominal 2x4's. All members are cut to fit (right side down).

